

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

SEPTEMBER 16, 1950

Improve DROP DOOR OPERATION...

EASIER CLOSING
SAFER HANDLING
POSITIVE FIT...



SPRING HINGES and ADJUSTABLE LOCKS

THE WINE RAILWAY APPLIANCE CO. TOLEDO 9, OHIO

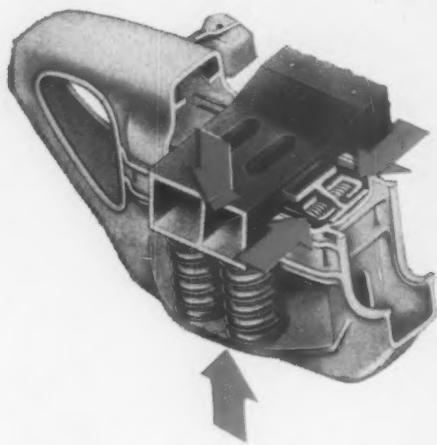
ROAD-PROVED...

- by MILLIONS of miles of service on over 20 leading lines—
- by scientific, instrumentation mainline road tests—



- provide ultimate riding qualities and tracking characteristics at all speeds
- reduce lading damage to a minimum.

—because exclusive L-V action
completely cushions and
controls both lateral
and vertical motion—
without costly maintenance!



No freight car is more modern
than its trucks.

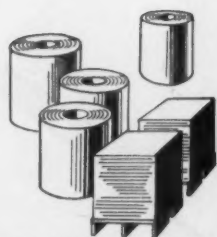


SCULLIN STEEL CO.

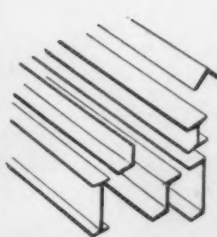
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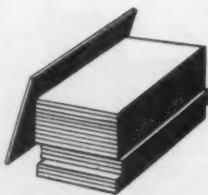
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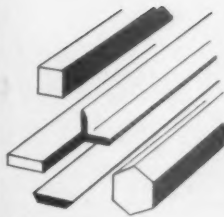
HOT AND COLD ROLLED
SHEETS AND STRIP



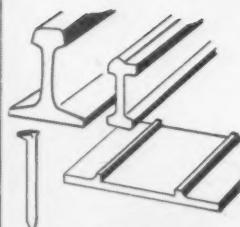
STRUCTURAL SHAPES



CARBON STEEL PLATES



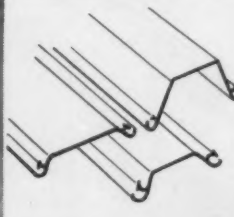
CARBON STEEL BARS



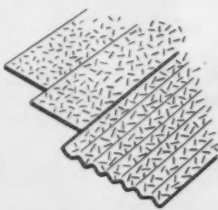
RAILS AND
TRACK ACCESSORIES



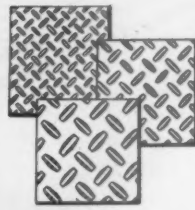
HI-BOND®
REINFORCING BARS



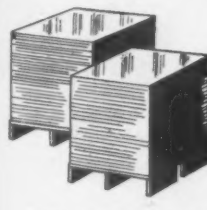
SHEET PILING



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PRODUCTS



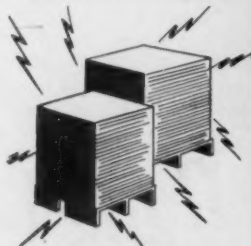
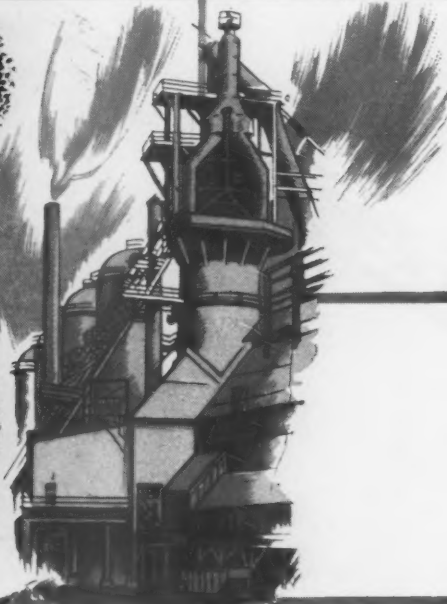
4-WAY® SAFETY PLATE



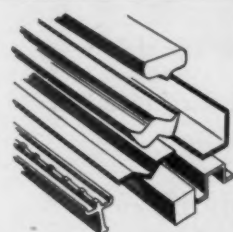
TIN MILL PRODUCTS



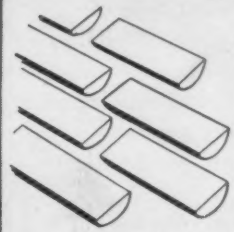
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AND TIN-ENAMEL®
SHEETS



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RAIL STEEL PRODUCTS



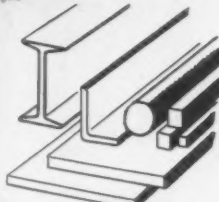
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LIMESTONE



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HI-STEEL® PRODUCTS

the men and
mills of

INLAND
STEEL COMPANY

are geared to serve
the industrial heartland

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In every type—every assignment—
the **Control Center**
of modern road locomotives is the **24-RL**

Passenger or freight, diesel, steam or electric—no matter what type of modern motive power you are buying or building, Westinghouse 24-RL brake equipment will provide any and all the braking functions required.

The 24-RL is a composite brake equipment, so designed that supplementary control functions can be incorporated at any time by inserting supplementary parts. Train control, safety control, overspeed features, and electro-pneumatic brake control for passenger service can be added in various combinations with no alteration in the basic piping. Because of this flexibility, this equipment is particularly well suited to modern "assembly line" production of locomotives.

Details of various combinations are given in Catalog No. 2058, sent on request.



Westinghouse Air Brake Co.
WILMERDING, PA.



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CONSOLIDATE CONTROL OF INTERLOCKINGS *at Division Headquarters*

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SWISSVALE



PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

THIS WAR IS DIFFERENT: The war in Korea—and the developments which may result from it—are different from any other war, hot, lukewarm or cold, in which the United States has ever engaged. Most of the differences—in fact, all the major ones—are on the unpleasant side. That very fact makes it all the more important that they be faced squarely and dealt with resolutely. Such fact-facing and resolute dealing leads to the unescapable conclusion that we can no longer indulge in our favorite national pastime of throwing away labor, capital goods and financial resources. Nowhere is the waste of those assets greater—or the need for their conservation more important—than in the field of transportation. So, busy as they undoubtedly are, railroad men now have the additional responsibility of pointing out, forcefully and persistently, the legislative changes necessary to permit transportation to function at top efficiency for the duration of the present emergency. (See editorial, page 39.)

HOW TO MAKE FRIENDS: Remember the old story about the graduate of a well known eastern university who denied the allegation that its students were unfriendly? When he was the catcher on its baseball team, he said, he had known every man on the team—"except one, and he played way out in left field." Southern Pacific officers at Houston go the university graduate a lot better. They want to know *every* man on *their* team! To accomplish that result they organized some two years ago, and have since maintained, a Monday-through-Friday luncheon club, which is bringing to its members mutual benefits, both in human relations and in better operation of the railroad. The story of the club is told on page 52.

TWO A MINUTE: Highly mechanized facilities recently placed in service by the D. & R. G. W. at Denver, Colo., put the icing of reefers on an assembly-line basis, with a rate of about two cars a minute. The machines, developed by the Railways Ice Company and manufactured by the Link Belt Company, are described and illustrated on pages 48-51.

WARTIME BASIS: Reminiscent of the days of 1941-1945, "priorities and allocations" are in the news again. James K. Knudson, youngest member of the I.C.C., and new supervisor of its Bureau of Service, will be responsible for administering such priorities and allocations as may be established for domestic rail, highway and inland waterway transportation. As related in the article which begins on page 63, Mr. Knudson's new responsibilities result from congressional approval of the Defense Production Act; from an executive order issued by the President on September 9; and from I.C.C. Chairman J. Monroe Johnson's voluntary relinquishment of his supervisory duties over the Bureau of Service—an action which may entitle the colonel to a lasting niche in the hall of fame as one of the few government officials in all recorded history who ever stepped down of his own free will from a position of potential power and influence. Authority over pipe lines goes to the interior department, while the commerce department gets equivalent

authority over air transport and ocean shipping—and also over allocation of such materials as steel for freight-car building. W. Stuart Symington draws the probably thankless job of "coordinator of delegated authorities."

SAVING STOPS: Train stops cost money! And so do train delays. So when a single interlocking promises annual savings of over 90,000 train stops, and from 12,000 to 24,000 train-hours, it ought to pay pretty handsome returns even on a cost of \$950,000. Those are the estimated results of a new interlocking at Fostoria, Ohio, covering a complex network of railroad-railroad and railroad-street intersections. It is more fully described, with illustrations, on page 46.

THEY MIGHT LEARN THE FACTS OF LIFE: Texas railroad employees, according to a news report from Austin, are considering a plan to form an employee corporation to operate passenger, mail and express service abandoned by the railroads because of operating losses. The plan is an interesting one, worth watching and wishing well. But we can't refrain from wondering how long it would take the leaders of the scheme to find out that their own apparently insatiable demands have been one of the fundamental causes of most service abandonments. And we pity the poor emergency board set up to adjudicate a wage-increase demand served by employee-employees on employer-employees.

KEEPING 'EM CLEAN: "Good housekeeping"—cleanliness and order—has long been recognized as an important safety factor in shops, yards and other railroad facilities. And the G. M. & O.—a pioneer Diesel user and still the country's largest wholly Dieselized railroad—finds that good housekeeping is also an important fire prevention factor on Diesel locomotives. Why this is so is told on page 43 by C. M. House, general superintendent motive power and equipment; Mr. House also gives considerable detail as to the schedules, materials and techniques which his road uses to keep its motive power in apple pie order. Diesel cleanliness is also discussed in a communication on page 53.

NEWS HIGHLIGHTS: Norfolk & Western, Western Maryland and Colorado & Wyoming to receive Harriman medals for best safety records of 1949.—Railway Tie Association holds 32nd annual meeting at Louisville.—Emergency board recommends 40-hr. week, with 7-cent hourly wage increase, for non-operating employees of 16 short lines.—Western Pacific directors approve refinancing plan.

SANDHOUSE: The illustrated feature article which starts on page 54 is sandhouse—but not in the sense of being rumor or gossip. It's a factual description of the big and versatile new Diesel sanding plant at the Chicago Belt's Clearing yard, in which sand is blown from a 150-ton main tank to servicing tanks as far as 375 ft. away.

**Your railroad too can
save up to \$100⁰⁰ per car set...**

**WITH SOUTHERN'S NEW
70-TON CHILLED CAR WHEELS**

Yes now it's proved that you can successfully operate any car in your modern freight fleet, including your 70-ton cars, on Southern Chilled Car Wheels. The performance of Southern's new cored hub wheels on a major railroad's 70-ton cars over the last 5 years proves their cost-cutting safety record. Here's what you get:

1 This new Southern wheel offers you new operating economy.

You *save* with Southern Chilled Wheels. They cost today \$12.50 less per wheel, \$100.00 less per car set, than other types of wheels. Multiply this by the number of cars you have to equip, and you can quickly see what they save you.

2 This new Southern wheel offers you new operating safety.

Tests prove that this new Southern wheel is stronger than previous chilled wheels. It has a 25% stronger flange and 100% stronger rim.

This new design becomes A.A.R. standard September 1, 1950.

3 This new Southern wheel is available to you immediately.

Southern Wheel foundries are located at key points to deliver these new wheels to you *overnight*. No waiting in an emergency. No need for large inventories—another saving!

4 This new Southern wheel is being proved in service.

Over 250,000 of the new cored hub Southern wheels are in service today.

ANOTHER MAJOR RAILROAD SAVES SAFELY WITH SOUTHERN CHILLED WHEELS

12,000 of Southern's newly-developed A.A.R. cored hub chilled car wheels will equip 1,500 70-ton gondolas for a Class I railroad! New safety—plus a saving, at \$12.50 a wheel, of \$150,000 for that road. Your road can avail itself of these important Southern Wheel benefits immediately. Call or write your Southern Wheel representative.

1850

100 years' experience — plus intensive research — brings you a superior product

1950

**25%
STRONGER
FLANGE**

**CONTINUOUS
BRACKETS**
offer maximum
reinforcement

**100%
STRONGER
RIM**

LOW
initial cost
LOW
replacement cost
LOW
machining costs

AMERICAN
Brake Shoe
COMPANY

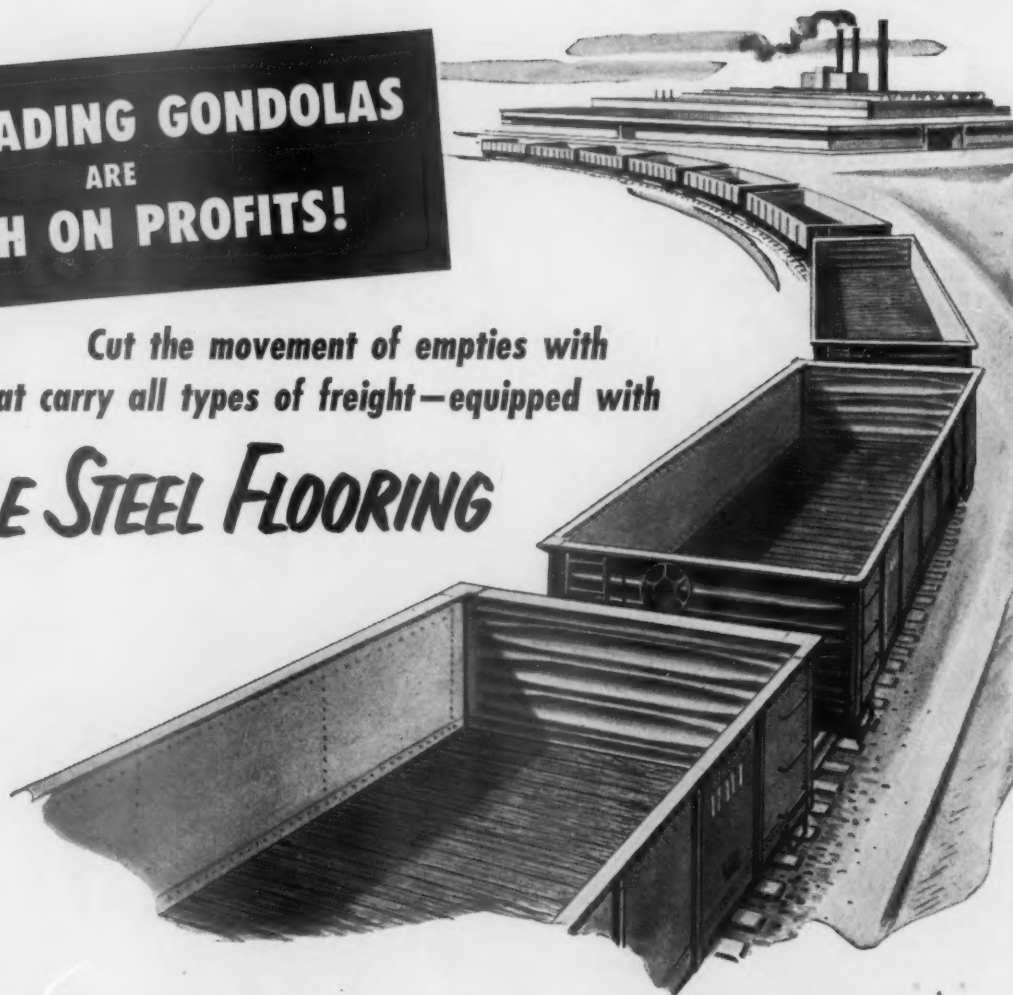
**SOUTHERN WHEEL
DIVISION**

230 Park Avenue,
New York 17, N. Y.

*Chilled
Car Wheels*

DEADHEADING GONDOLAS ARE DEATH ON PROFITS!

Cut the movement of empties with
gondolas that carry all types of freight—equipped with
NAILABLE STEEL FLOORING



You know the costs, and problems, of shifting *wood floor* gondolas from job to job... and of getting *steel-plate* floor gondolas from place to place. Such deadheading takes a whole lot of time and money.

NAILABLE STEEL FLOORING changes all that. Now, with N-S-F, the same gondolas that deliver *rough* freight—coal, pig iron, crushed stone—can carry away wood-blocked loads, skidded “floating” loads, or any other kind of open-top finished freight.

NAILABLE STEEL FLOORING makes this possible because (1) it's formed of tough, corrosion-resistant N-A-X HIGH-TENSILE

steel that stands up under the roughest clam-shell or magnet loading. Yet (2) NAILABLE STEEL FLOORING takes nails easily, holds them tight, and has an excellent surface for blocked or skidded loads.

All this benefits car supply and improves operations; when equipped with NAILABLE STEEL FLOORING, 500 gondolas can do the work of 700 to 800 wood floor or steel-plate floor gondolas. You can serve more shippers, faster, with less equipment!

When ordering new gondolas, or rebuilding old ones, be sure to specify NAILABLE STEEL FLOORING.

GREAT LAKES STEEL CORPORATION

Steel Floor Division, Ecorse, Detroit 29, Michigan

NATIONAL STEEL CORPORATION



SAVE FLOORING WEIGHT • GAIN FLOORING STRENGTH

In a 52' 6" gondola, to attain floor strength equal to that of NAILABLE STEEL FLOORING—made of corrosion- and abrasion-resistant N-A-X HIGH-TENSILE steel—would require approximately 1,600 pounds more weight if plain carbon steel were used. In a 40' 6" boxcar, it would require 1,000 pounds more in plain carbon steel.

SOUTHERN RAILWAY'S REMODELED COACHES

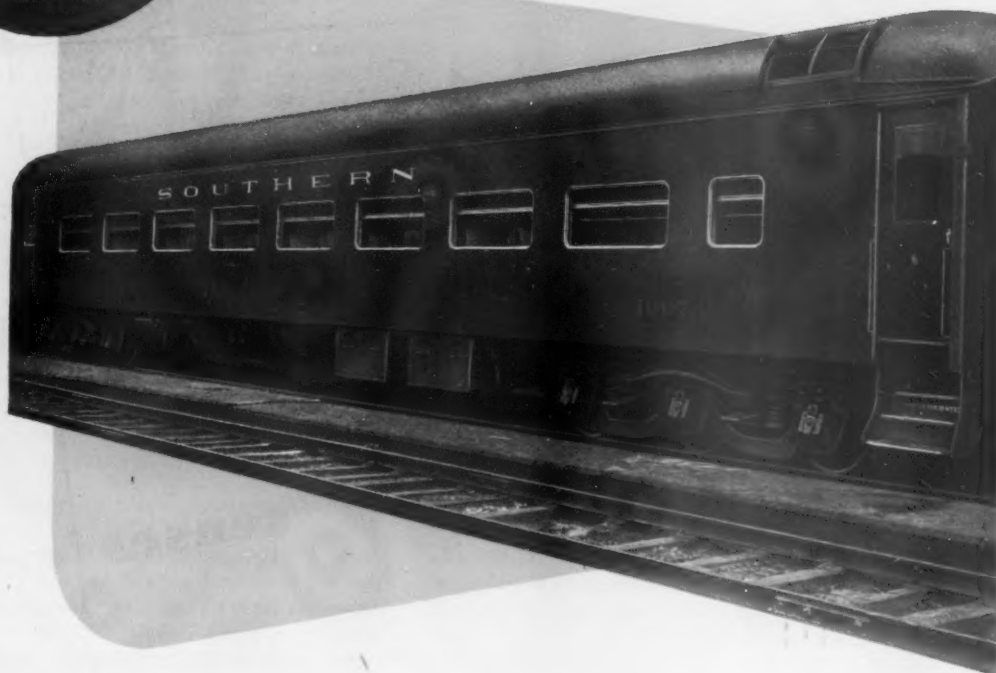
feature the

"Magic Touch"



Automatic

End Door Operators



Rebuilt from the under-frame up in the company's own shops, Southern Railway's streamlined remodeled coaches successfully combine their designers' dual objectives — matching comfort and convenience with complete safety. In line with such aims, these handsome, restful coaches provide the "Magic Touch" of NP Automatic End Door Operators to ease passage from car to car.

The NP Automatic End Door Operator is the popular choice for virtually all new and remodeled passenger equipment because it is a natural passenger-pleaser. What's more, it is ef-

ficiently and compactly designed to require little space and to operate either swinging or sliding end doors. And it is rugged and durable... simple to service... easy to maintain.

Your coach modernization plans should include the advantages provided by this modern method of end door control. For NP Automatic End Door Operators are safe, sure and simple to use... and they'll make a proved hit with your passengers.

For full information on this product of NP Engineering, write for Publication No. 1063-A for swing doors or Publication 1068 for sliding doors.

NATIONAL PNEUMATIC CO., INC.

GRAYBAR BLDG., NEW YORK • 125 AMORY ST., BOSTON 19, MASS. • McCORMICK BLDG., CHICAGO

Represented in Canada by Railway & Power Engineering Corp., Ltd., Toronto

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL AND SAFETY EQUIPMENT



senses census

If you have an eye for value, a nose for news, discriminating taste in styling—Karpen seats should be your only consideration. Economy designed for luxurious comfort, always in the forefront with newsworthy new construction improvements, smartly tailored to *add to* interior appearance—Karpen remains the sensible buy in transportation seating.



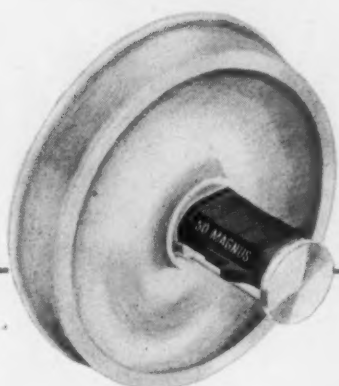
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S. KARPEN & BROS. **TRANSPORTATION SEATING**
624 South Michigan Avenue, Chicago One Park Avenue, New York

George B. Cross Company EXCLUSIVE SALES AGENTS

KARPEN SEATING . . . POINT OF CONTACT BETWEEN THE COMPANY AND ITS PASSENGERS

How Standard AAR Solid Bearings Provide MAXIMUM POTENTIAL IN TON MILES PER HOUR



— at minimum cost !

In a unit of motive power, railroads buy potential gross ton miles per hour. They want to move a maximum number of cars at highest practical speeds over prevailing grades of track. And when those cars are standard-bearing-equipped, they can do just that, *at lowest possible cost*. Here's why:

LOWEST INITIAL CAR COST

Per car set, standard AAR bearing assemblies average about 1/20 of the cost of the multiple-unit type. In terms of rolling stock, that means you get *four* solid-bearing cars for the price of *three* of any other bearing type. Right there you have a 33% *advantage* in potential ton miles of revenue per car dollar invested.

LOWEST OPERATING COST

It takes less power, therefore less fuel, to move a train from "A" to "B" when cars are solid bearing equipped. That's because there's *equal or less friction per bearing in pounds per ton over the whole run*. But that's not all. On every moving train solid bearings save many tons excess dead weight — put the maximum trac-

tive effort of a locomotive to the business of moving goods.

MAXIMUM PROTECTION FOR LADING

The standard AAR solid bearing is the only journal bearing for rolling stock that inherently provides flexible control of lateral shocks — around curves, over joints, frogs and switches. There's permissible lateral movement designed right into the bearing, to cushion shocks before they reach the car and lading. And that's why solid bearings admittedly give unequalled riding quality on any standard freight car truck.

LOWEST COST FOR MAINTENANCE

There's never any shopping for bearing maintenance with AAR solid bearing cars. Complete inspection takes less than a minute. Replacement's simply a matter of jacking the "box" — a ten minute job for a one-man crew. No costly equipment or labor involved — no excessive standby inventories — no extra delays for replacing trucks. And that adds up to more time "on line" — a still greater potential in net ton miles of revenue.

Yes, in every way, the AAR solid bearing is a railroad's best bearing investment. It's a *simple standard*: dependable, safe, unrestricted as to speed and load, with an unbeaten performance record in rigorous railroad service. Magnus Metal Corporation, 111 Broadway, New York 6, N. Y.; 80 E. Jackson Boulevard, Chicago 4, Ill.

MAGNUS METAL CORPORATION

Subsidiary of

NATIONAL LEAD COMPANY



Continuous research and development
at **AMCRECO**

*Means lower
maintenance
cost here!*

Amcreco
Lowry Process
**Creosoted
Products**

The ever increasing life expectancy of Amcreco Creosoted Products is no accident. It is the direct result of continuing research and development at Amcreco. With the tried and proven Lowry pressure creosoting process as the foundation, refinements and improvements in treatment techniques have in many instances doubled and even tripled service life in the space of the last 25 years.

Backed by this progressive program, Amcreco Creosoted Products are your best assurance of long life and minimum maintenance. For greater all-around economy on your next job, specify Amcreco.

- Adzed and Bored Cross Ties
- Bridge Ties
- Piles
- Timbers

AMERICAN CREOSOTING COMPANY

COLONIAL
CREOSOTING
COMPANY
INCORPORATED

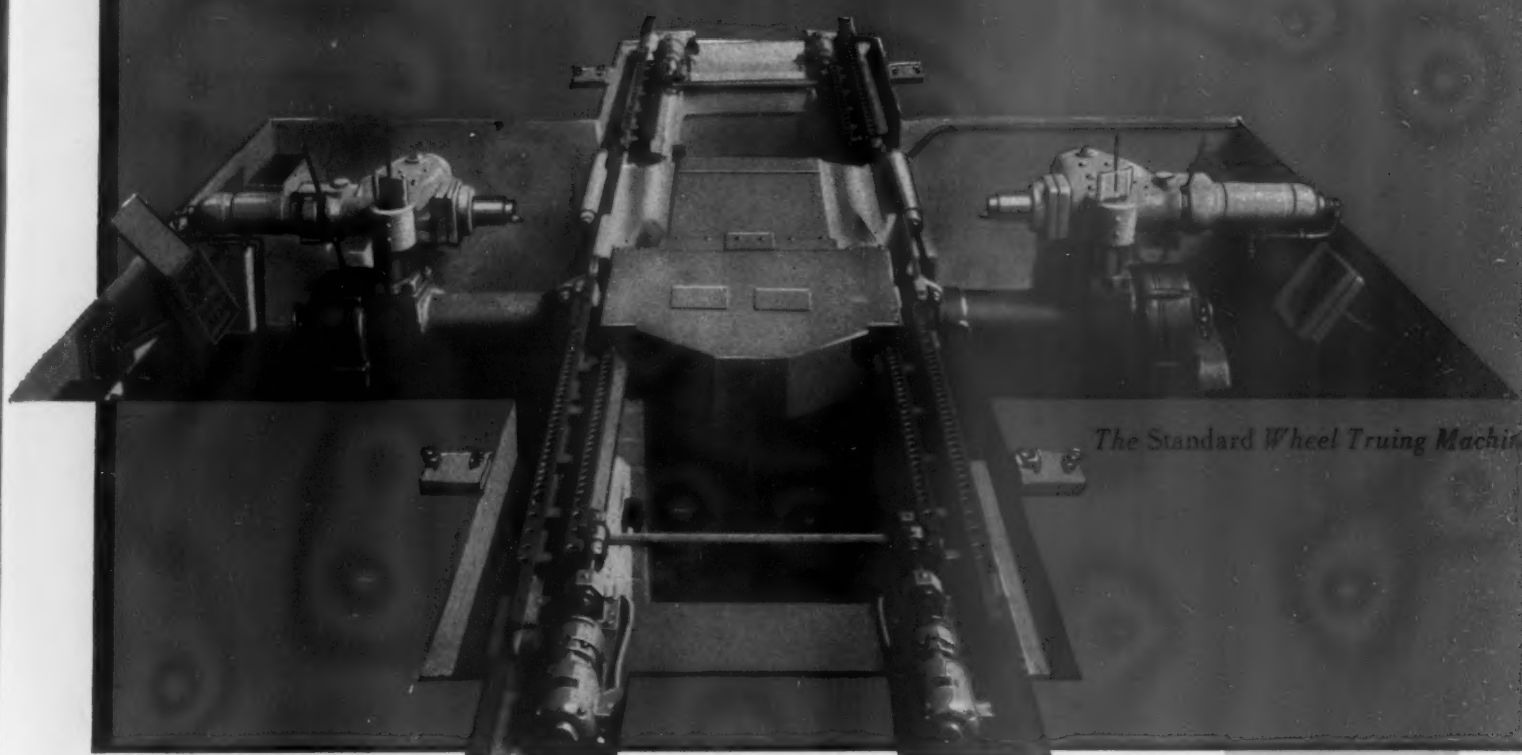


GEORGIA
CREOSOTING
COMPANY
INCORPORATED

LOUISVILLE, KENTUCKY

*Pressure-treated
for
strength that lasts!*

*Today it is obsolete to
remove wheels for truing!*



The Standard Wheel Truing Machine

LET us prove our statement—that it is obsolete to remove wheels to restore their contour.

Investigate the tremendous savings in money and out-of-service time.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4, ILLINOIS

THE WORLD'S LARGEST FABRICATOR OF RAILWAY CAR SPECIALTIES

PS-1



*A quality box car . . .
efficiently produced.*

MEMO

At Pullman-Standard,
standardization
never holds back *progress.*

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH
BIRMINGHAM • SAN FRANCISCO

ECONOMY SAYS:

**"Go all the
way with
'Cat' Diesel
off-track
power"**



YES, economy expresses itself *emphatically* when full advantage is taken of the many uses for "Caterpillar" Diesel Engines and Electric Sets. *Emphatically* in the savings that accrue from extremely low fuel and other operating costs. *Emphatically* in the low maintenance cost of these time-proved power units. *Emphatically* in the simplification of parts and service through standardization.*



Standardizing on "Caterpillar" Diesels in powered off-track equipment as well as in rail cars and locomotives brings parts and service under the responsibility of one manufacturer and one widespread and thoroughly equipped dealer organization. It unties railroad funds from parts stores and puts complete parts facilities as near as your telephone.

CATERPILLAR, PEORIA, ILLINOIS

REG. U.S. PAT. OFF.



◀ **TUG.** Many railroad-owned boats handling car ferries and barges are "Caterpillar" Diesel powered. This one, using a "Cat" D13000, does a big day's work for the Western Maryland Railroad.

REFRIGERATION. These three "Caterpillar" Diesels produce 40 tons of ice daily for refrigerator cars passing through the T. P. & W. Railroad yards. They operate 24 hrs. per day in summer; 16 hrs. in winter.

◀ **CRANE.** This "Cat"-powered crane can pick up 12 tons with hook or sling; four tons with 36-in. magnet. A work-saver and cost-saver on the Great Northern Railway!

CRIBBER. "Caterpillar" power versatility is demonstrated in this modern track maintenance machine—a cribber with a high daily work output in service on an Eastern railroad.

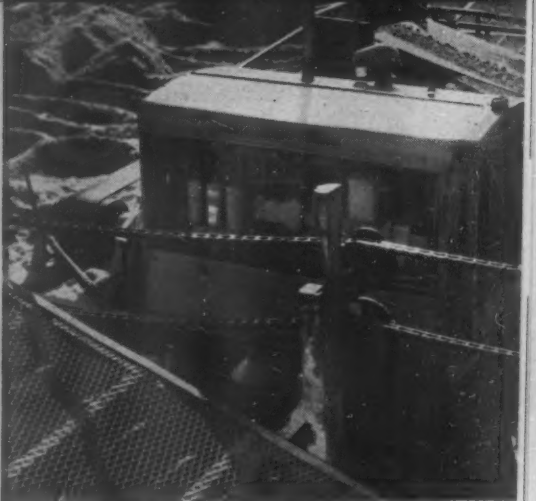
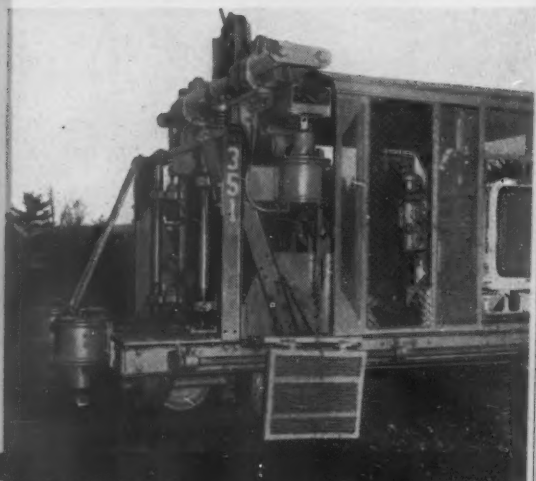
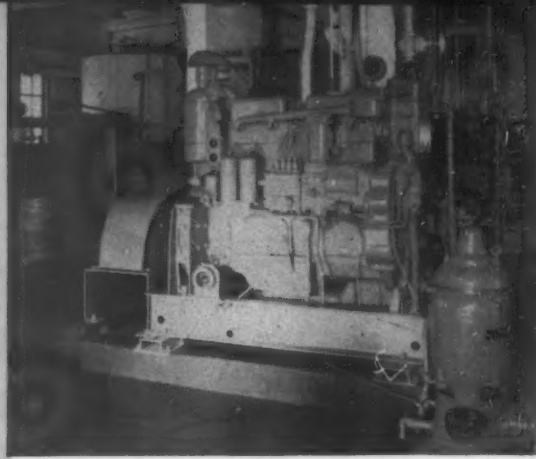
◀ **LIGHT AND POWER** are generated by two "Cat" Diesel Electric Sets for a host of rail and water transportation facilities—railroad station, boat shed, boat repair shop, coal chute and station agent's house at Ontario, Canada.

GRAVEL PLANT. Every railroad needs plenty of gravel, sand and ballast rock. Power takes a beating wherever they are produced. But "Cat" Diesels never flinch! Seals and filters keep ruinous grit out of their insides.

◀ **COMPRESSOR.** Track relocations and extensions, building sites and other tough excavation projects call for tough equipment. This "Cat"-powered compressor drives a wagon drill and two jackhammers. Location, California.

* * *

"Cat" power is available in equipment built by leading manufacturers.



LOOK UNDER THE HID

"Caterpillar" intake and exhaust valves are made of highly alloyed, heat-resistant steels. Their ample size, close machining and heat-treat specifications have resulted in thousands of hours of trouble-free valve operation. Valve and rocker arm design are matched to reduce wear. Look under the hide for quality. It doesn't show on the outside—it shows up in performance.

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

Today's finest Diesel equipment



U N I T E D

rolls on today's finest wheels . . .

U·S·S Wrought Steel Diesel Wheels

ON railroads all over the country, both large and small, Diesel locomotives have earned a reputation for superb performance, high earning power and round-the-clock availability. Many roads depend upon U·S·S Wrought Steel Diesel Wheels to help maintain this reputation. By matching the efficiency of the Diesel power unit with the superior dependability of U·S·S Wrought Steel Diesel Wheels these roads are assured longer periods of uninterrupted service and long-mileage safety . . . even at the breath-taking speeds demanded of today's transportation.

Extra-mileage U·S·S Wrought Steel Diesel Wheels are made from only uniform, high-grade steel that is carefully controlled in forging, rolling and heat-treating to assure a finished product that is highly resistant to the stresses of heavy wheel loads, torque and lateral forces.

U·S·S Wrought Steel Diesel Wheels can be furnished either rim toughened or entirely quenched—in diameters of 33, 36, 38, 40 and 42 inches. And, in order to serve you more promptly and efficiently, they're available from two strategically-located sources of supply: one at McKees Rocks (Pittsburgh), Pennsylvania, to serve the railroads of the East and Southeast, and another at Gary, Indiana, to supply Western and Southern roads.

For longest periods of service without enginehouse attention and stand-by losses, specify U·S·S Wrought Steel Diesel Wheels the next time you order. You'll soon see why they are the first choice of the country's finest locomotive builders.

CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

**U·S·S WROUGHT STEEL
DIESEL LOCOMOTIVE WHEELS**



0-1600

S T A T E S S T E E L



Write for National C-1 Truck Circular
No. 5150. The National Malleable and
Steel Castings Co., Cleveland 6, Ohio.

Seven basic design and construction advantages of National C-1 Trucks help you deliver merchandise on time and in good order—for greater good will from your shippers and receivers.

For a smoother, safer ride . . . depend on NATIONAL Lading-Conscious C-1 Trucks—they protect your equipment, your roadbed and the interests of your customers.

NATIONAL

- 1 Quick Easy Visual Inspection**—Gives immediate assurance that friction control mechanism is functioning properly, without time delays or cost of handling or removing a single part.
- 2 Friction Mechanism in Side Frame**—Simplifies control of lateral and vertical truck motion.
- 3 Large Wedge Bearing Surfaces**—Wear is minimized because bolster is protected by hardened-steel wear plates.
- 4 Low-Stressed Wedge Springs**—Low-rate wedge springs are cold-wound and shot-peened for extra fatigue resistance.
- 5 Full Box-Section Bolster**—Bolster has maximum strength and rigidity because it is a full box-section from end to end . . . is not recessed or notched for friction control mechanism.
- 6 Spring Deflections**—Springs of $2\frac{1}{2}$, $3\frac{1}{16}$, $3\frac{11}{16}$ or 4-inch deflection can be used.
- 7 Wedge Aligning Lugs**—Four wedge aligning lugs integrally cast in the top of each journal box protect journal bearing lugs against peening and breaking.

NATIONAL MALLEABLE and STEEL

TRUCKS • COUPLERS • YOKES • DRAFT GEARS



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CAPY. 100000
LD. LMT. 121000
W 3-50 L.T.WT. 48000

Lading-Conscious C-1 TRUCKS

*reduce damage claims . . .
protect your equipment*

CASTINGS COMPANY
JOURNAL BOXES AND LIDS



A-3968

Is Your Air Conditioning Keeping You

**The Solution to Your Problems is Safety Company's
New, Improved ELECTRO-MECHANICAL
AIR CONDITIONING EQUIPMENT**

More Cooling Capacity!

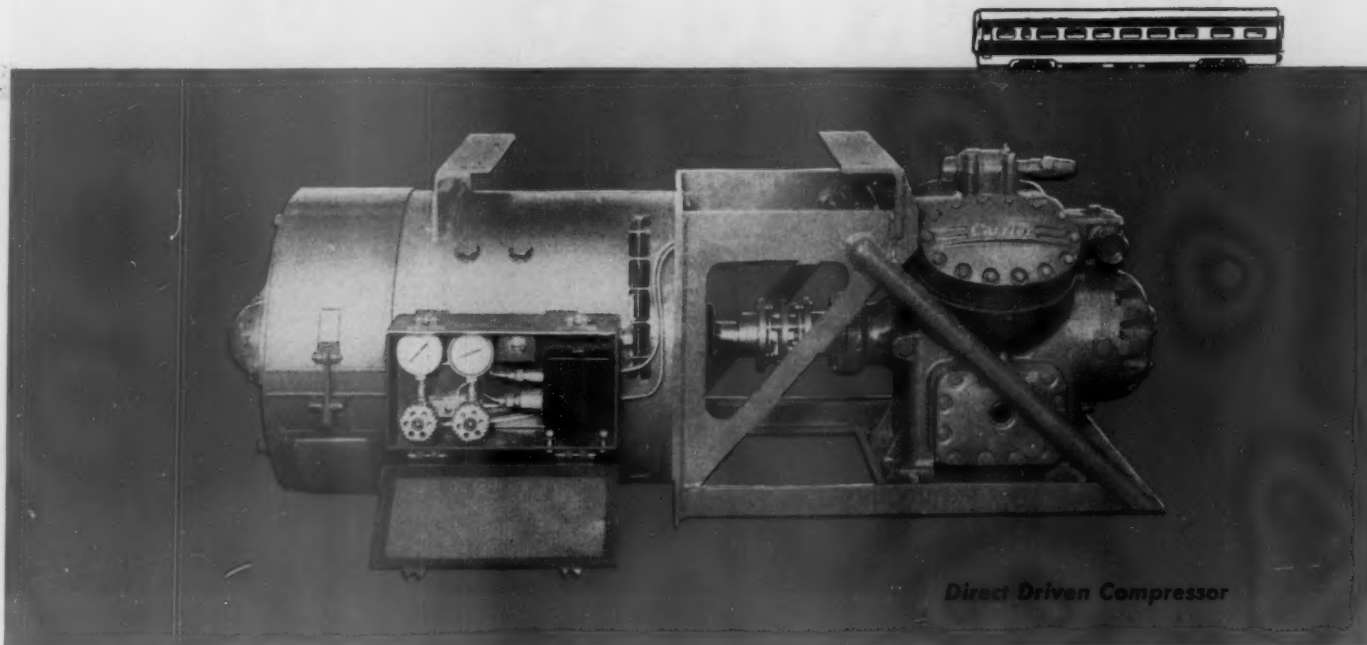
SAFETY Electro-Mechanical Equipment will maintain desired car temperatures with maximum loading and highest ambients. Precools cars faster.

No Compressor Belt Trouble!

SAFETY Direct-Driven Compressor eliminates belts.

Low Power Load!

SAFETY Evaporative Condenser reduces power requirements.



Direct Driven Compressor

THE SAFETY CAR HEATING

OFFICES: NEW YORK • CHICAGO • PHILADELPHIA

Hot under the Collar?

Cuts Cleaning Costs!

SAFETY Evaporative Condenser maintains capacity because filtered air and large volume spray keep coil clean. Spray is non-clogging and sump can be flushed quickly.

Low Service Costs!

SAFETY units are completely accessible. All parts can be removed and serviced individually and quickly.

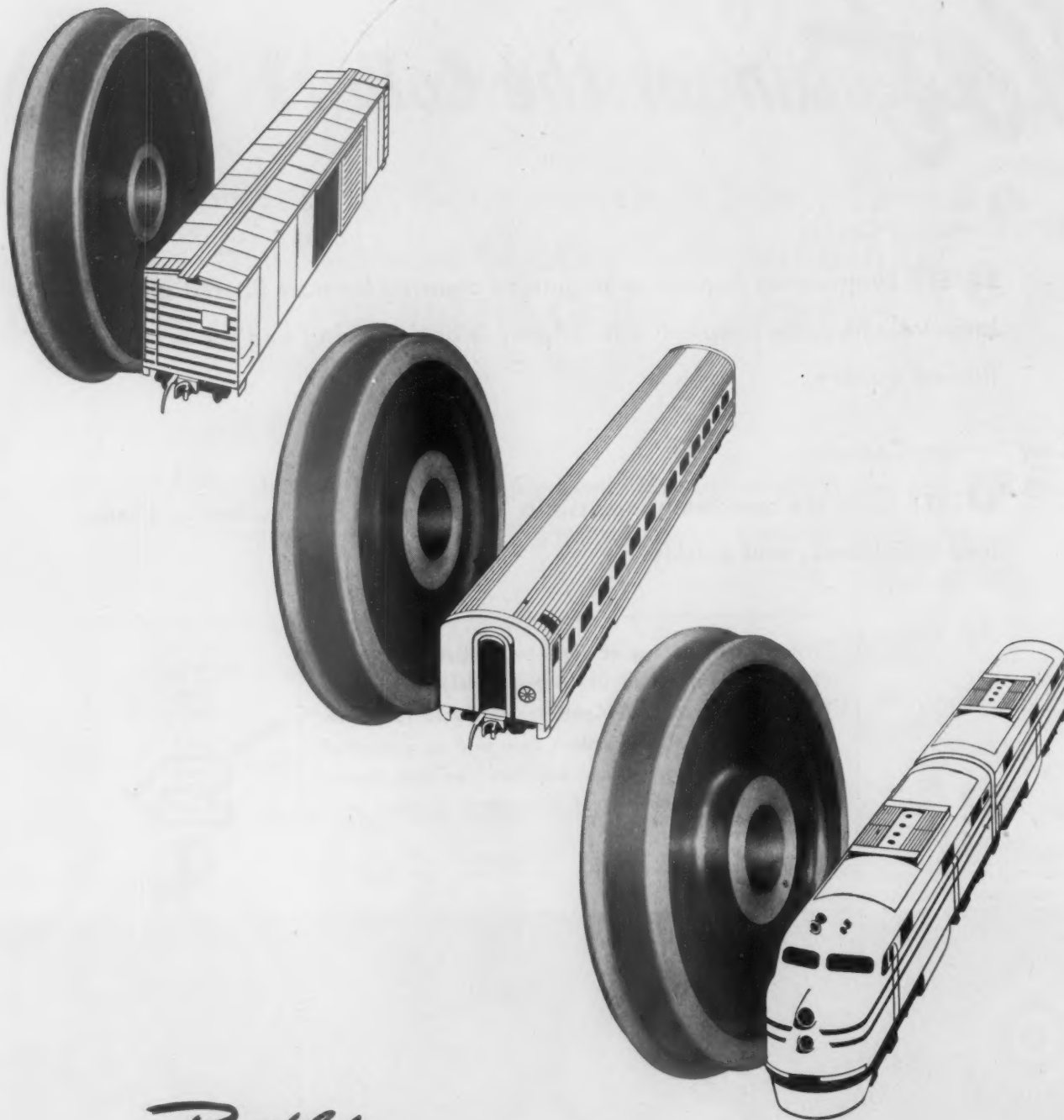
Write today for copy of our latest bulletin No. 4224 illustrating and fully describing Safety Company's Electro-Mechanical Air Conditioning Equipment. This manual contains specification data and an outline of specific advantages. It explains how you may choose from four combinations of equipment to meet your own requirements.



Evaporative Condenser

AND LIGHTING COMPANY INC.

ST. LOUIS • SAN FRANCISCO • NEW HAVEN • MONTREAL



Bethlehem wheels are made with a care that far exceeds ordinary limits. No wheel ever leaves our shops until we are satisfied that it will do its job faithfully and well.

From the making of the steel to the final inspection, a Bethlehem wheel is subject to the tightest possible controls, including an exhaustive series of metallurgical checks and cross-checks. Whether you need untreated freight wheels or the heat-treated types for passenger cars and locomotives, you can rely fully upon the Bethlehem product. There is no finer.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



BETHLEHEM WROUGHT-STEEL WHEELS

COMPANIONS TO BETHLEHEM FORGED-STEEL AXLES

FREIGHT • PASSENGER • DIESEL



THE A.S.F. SERVICE LABORATORY

Over 5 times around the world

TO MAKE FREIGHT TRUCKS BETTER, SMOOTHER

● Thanks to the A.S.F. Service Laboratory, freight car truck performance is *now* an open book. Since 1940, this unique fact-finding train has traveled more than 135,000 miles on nearly 900 test runs, to bring users and manufacturers alike a *true picture* of truck operation. The Log, through 1949, appears below.

Virtually *nothing* was known of freight-truck behavior at high speeds until American Steel Foundries introduced the Service Laboratory. Then the value of this *on-the-job* research was quickly demonstrated. Early in 1943—after the Service Laboratory had made 181 tests, covering 25,312 miles—the *first* easy-riding A.S.F. Ride-Control Trucks went into use carrying airplane wings from Detroit to the Coast. Pilot runs were made in freight trains, but—by fall—these smooth-rolling cars were operating in *regularly scheduled fast passenger service*. Never before had any freight truck been entrusted with such a responsibility, nor had any *performed* so beautifully.

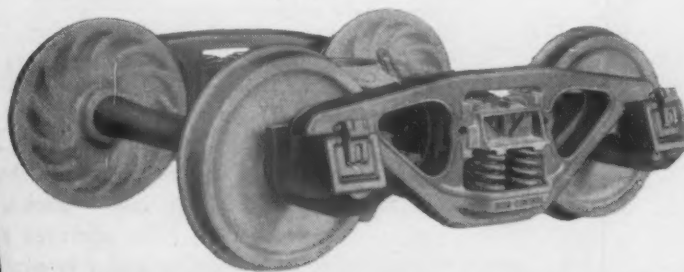
This, however, was just the beginning. Throughout the years that followed, the Ride-Control Truck was continually tested—at *all* speeds and car loadings; over *all* kinds of track; with *all* lengths of spring travel—and improved wherever possible. And, for the past three summers, the Association of American Railroads has operated the A.S.F. Service Laboratory for its own independent investigations. *Today*, the comparative performances of freight car trucks have been carefully charted for the guidance of makers and users.

Freight-truck progress in the last ten years is a *major miracle* of railroading. Long-travel springs, with which Ride-Control Trucks have been equipped from the first, now are specified for *virtually all* new cars. Simple, functional design has become a *universal goal* because A.S.F. pointed the way. And easy-riding, low-maintenance Ride-Control Trucks are saving countless dollars for both *carriers and shippers* because there is no letup in the A.S.F. search for the new that is better . . . *that is right*.

LOG OF THE A.S.F. SERVICE LABORATORY

RIGHT-OF-WAY USED	WHERE RUN	NO. OF RUNS	DURATION OF TEST	TOTAL MILEAGE
C. M. St. P. & P. Missouri Pacific New York Central Santa Fe	Milwaukee-Portage	56	8/22-11/26, '40	9,632
	N. Little Rock-Bald Knob	72	1/14-5/2, '41	7,200
	Englewood-Elkhart	53	6/15-10/28, '42	8,480
	Chicago-Chillicothe	1	4/22/43	260
	Chicago-Kansas City	1	4/29/43	900
	Chicago-Ft. Madison	4	5/1-5/20, '43	1,880
	Proviso-Clinton	32	2/28-4/21, '44	3,968
	St. Paul-Duluth	34	5/7-9/19, '44	10,880
	Chicago-Ft. Madison	40	10/30-12/14, '44	8,800
	Chicago-Ft. Madison	96	3/19-12/7, '45	21,120
C. & N. W. Great Northern Santa Fe	Chicago-Ft. Madison	35	2/20-4/26, '46	6,020
	Oakland-Sacramento	20	7/8-8/20, '46	2,340
	Chicago-Chillicothe	12	9/2-10/1, '46	2,640
	Chicago-Ft. Madison	97	4/25-11/6, '47	12,028
Southern Pacific Santa Fe	Chicago-Ft. Madison	22	1/8-2/6, '48	2,200
	Clinton-Gilman	22	6/10-7/3, '48	1,892
	Grand Rapids-Grand Ledge	78	7/27-11/13, '48	9,672
	Venice-Springfield	72	3/29-7/1, '49	8,928
Illinois Central Pere Marquette G. M. & O.	Clinton-Gilman	81	7/5-10/28, '49	10,044
	Clinton-Gilman			
	Clinton-Gilman			
GRAND TOTALS		828		128,884

*Conducted by the Association of American Railroads.



A-S-F Ride-Control® TRUCK

CONSTANT FRICTION CONTROL
LONG SPRING TRAVEL

AMERICAN STEEL FOUNDRIES

IF . . .

You Have an Intercom Problem

*There is an Electronic Communication Equipment
Company Intercom Amplifier to Solve it*

If you want to save time in a yard with an intercom system, speed handling in a freight house, cut delay in interdepartment communication, monitor towers or communicating systems, there is an Electronic Communication Equipment Company amplifier to fill your needs. Every EC amplifier is designed and built specifically for the needs—and the demands—of modern railroads.

For High Level Systems

EC Model 50 ALDT is a 50 watt, wide frequency range power amplifier incorporating a "talk-back" relay. It has automatically switched inputs for microphone or "talk-back" speaker and 70 volt constant output, eliminating impedance matching problems in a paging system.

For Low Level Systems

EC Model 17 ALDT is a 15 watt, wide frequency range amplifier with a "talk-back" relay. Input characteristics are the same as Model 50 ALDT, while outputs are provided both for intercom speakers and for low level feeding to remote amplifiers for paging purposes.

For Combination Use

EC Model 8 AL is a general purpose intercom amplifier, with the advantage that it matches a 600 ohm telephone line and permits ringing. It uses a relay and rectifier so that the "talk-back" switch can be operated remotely from one or more points. A special monitoring model is available.

WRITE for more information about these, or any other of the complete line of EC railroad communication equipment. We will be glad to assist in any communication problem.



ELECTRONIC COMMUNICATION EQUIPMENT CO.

1219-21 LOYOLA AVE. CHICAGO 26, ILL

Two month demonstration
TEST PROVES
 OUTSTANDING PERFORMANCE
 of the
NORDBERG
 ballast reconditioning
"THREESOME"



1

CRIBEX...

This spring, a two month demonstration test of the Nordberg ballast reconditioning "threesome" was started on a midwestern Class A Road. 4 Cribex, 1 Ballastex and 1 Screenex were teamed together to clean *fouled slag ballast*. Despite very unfavorable weather conditions, 15.2 miles of single track was cleaned "out-of-face" (Cribs, Shoulder and Intertrack screened for total distance) in 43 available working days, including 2½ days lost due to weather. Here is a summary of work done from April 6 through May 29:



2

BALLASTEX...



3

SCREENEX...

CRIBEX

Total half-Cribs excavated	78,151
Total full Cribs excavated	39,076
Total miles cribbed	12.21
Average half-Cribs excavated per Cribex per working hour	108.4
Average track feet half-cribbed per working day	3700
Average track feet fully cribbed per working day	1850

BALLASTEX-SCREENEX

Total feet cleaned, Shoulder Side	60,867
Total feet cleaned, Intertrack Side	81,187
Average feet per working hour, Shoulder Side	951.0
Average feet per working hour, Intertrack Side	904.1
Average track feet (both sides) per working day	2089

These results were accomplished by the Nordberg "Threesome" with a foreman and 22 men . . . none of whom had ever seen these machines before. The best day's production with the Cribex was 2,829 half-cribs in 5½ hours actual on-track time. Best production for the Ballastex-Screenex on shoulder was 5,538 ft. in 5½ hours. Best intertrack production was 5,280 ft. in 4½ hours.

For further details of the money-saving ability of these machines, write for BULLETIN 174.

See these machines
 at the CHICAGO COLISEUM
 September 18-19-20
 BOOTHS 7-S to 20-S

Look to
NORDBERG

R550

... for continually improved TRACK MAINTENANCE MACHINERY
 to do a Better, Faster Maintenance Job at Lower Cost

NORDBERG MFG. CO., Milwaukee 7, Wisconsin

LIMA-HAMILTON SWITCHERS...



Taken at Peoria, Illinois

... on the



"Lima-Hamilton switchers have
thoroughly satisfied our railroad
in doing the job expected of them ..."

says the **TOLEDO, PEORIA AND WESTERN**



LIMA LOCOMOTIVE WORKS, INC.

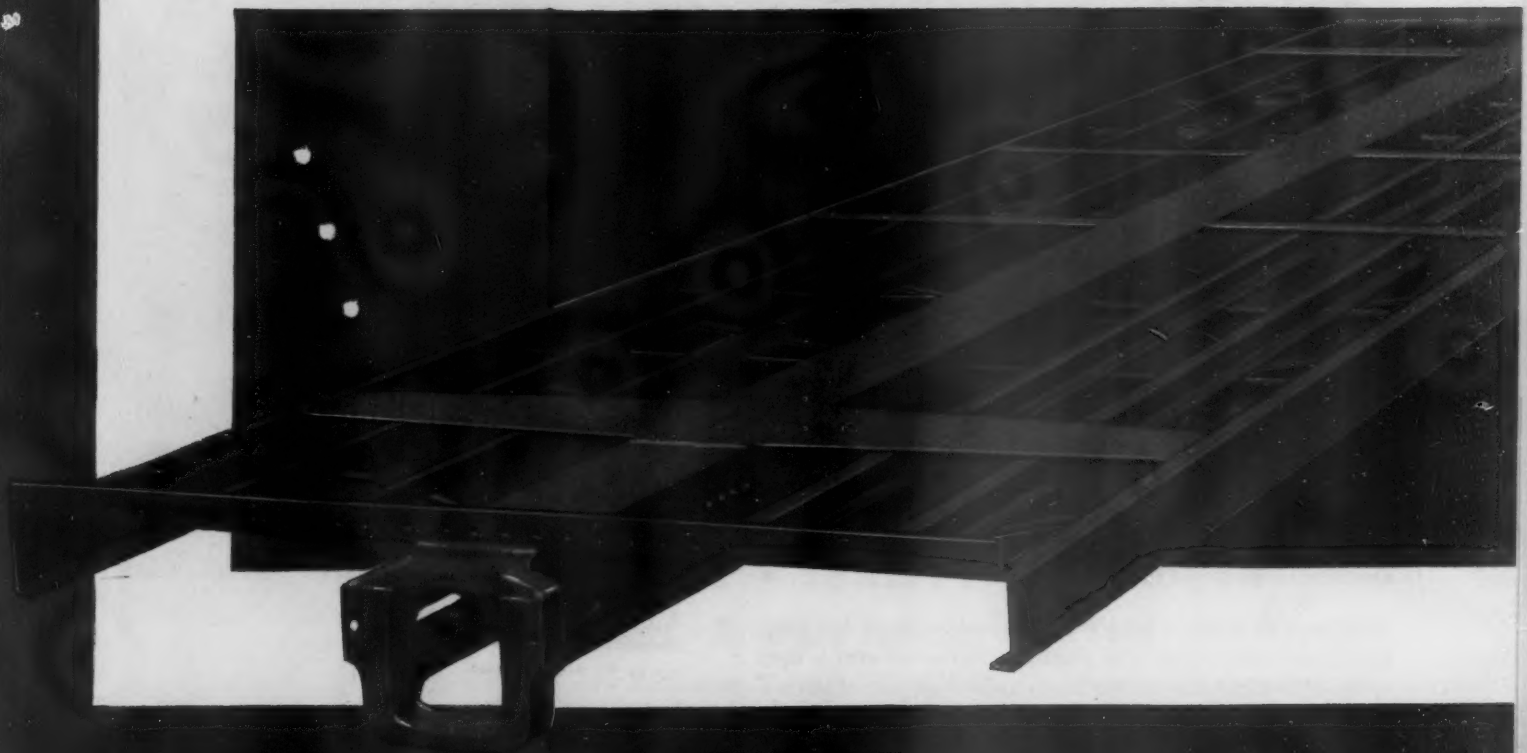
A division of the Lima-Hamilton Corporation

LIMA, OHIO

"BAD ORDER" REPORTS
INSPIRED THE

*International
underframe*

All DOWN-HAND welded, with maximum use of automatic and semi-automatic arc welding, this NEW CONCEPT in underframes comes equipped as a complete unit, upon specification, with couplers, draft gears, air-brake equipment brackets, piping, lever carriers, etc.



- Body bolster top cover plate designed to eliminate cracking and buckling. A continuous plate from side-sill to side-sill.
- Full box-section bolsters and cross-bearers.
- Continuous channel side-sills.
- Integral cast-steel center fillers-rear draft lugs.
- Integral cast-steel striker-front draft lugs.
- A.A.R. requirements equalled OR SURPASSED in every feature.

REALIZATION that loss of service time and revenue, and recurrent maintenance expense, were being caused by the SAME STRUCTURAL FAULTS YEAR AFTER YEAR induced the development of INTERNATIONAL'S CAR UNDERFRAMES.

A FRESH ENGINEERING APPROACH—based on service weaknesses and car structure failures—was inaugurated. Past practices and existing designs were critically examined. The result: THIS MUCH STURDIER UNDERFRAME INCORPORATING A MAXIMUM UTILIZATION OF MATERIAL SECTION WITH MINIMUM WEIGHT.

INTERNATIONAL STEEL CO.

RAILWAY DIVISION
Evansville 7, Indiana

One Secret of

INCREASED POWER

LOWER MAINTENANCE

LONGER ENGINE LIFE

EELIMINATE excessive failures from wear, burning and erosion in the ring area of aluminum alloy pistons . . .

Particularly in the top ring groove . . . which encounters the most heat, receives the least lubrication, and faces wear from abrasive dust and dirt coming in through the intake.

A Ni-RESIST® band gives the stop-sign to excessive ring groove wear and, thus, curbs unnecessary oil consumption and needless loss of power due to "blow-by."

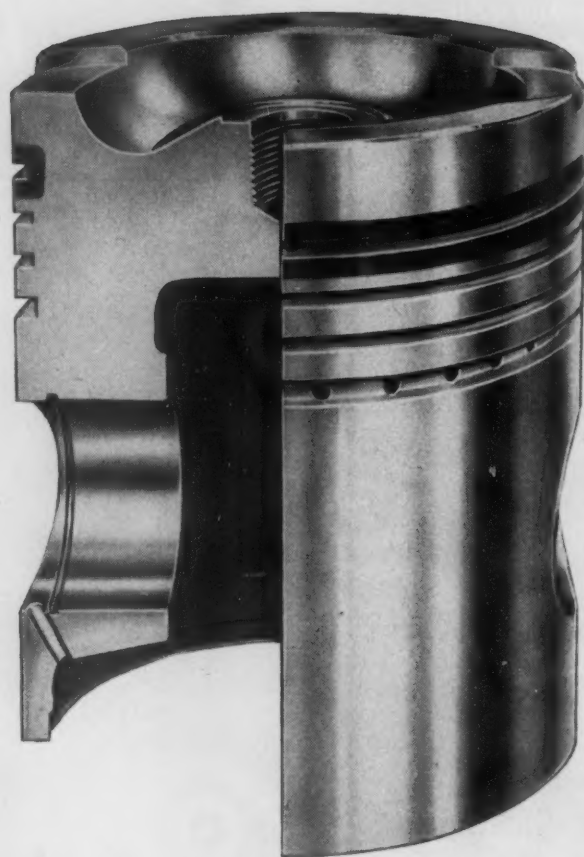
Records show that these troubles end when the Al-Fin process for molecular bonding of aluminum to iron or steel is used to make Ni-Resist ring carrier bands an integral part of pistons.

Ni-Resist . . . a high nickel alloy cast iron . . . meets all demands for this application. It resists heat, corrosion, metal-to-metal wear and galling. Moreover, its high thermal expansion coefficient is close to that of aluminum alloy 142 and 132 ("Lo-Ex") to which it is bonded by the Al-Fin process . . . developed by Al-Fin Division of Fairchild Engine and Airplane Corporation, Farmingdale, L. I.

Rings operating in Ni-Resist bands are unable to chew their way into the ring bands, and service records show remarkable improvement in piston life, as well as higher power per cylinder.

United Engine & Machine Company of San Leandro, California, is one of several concerns in this country and abroad, licensed to manufacture bimetal products by the Al-Fin process. United's "Dualoy" bonded aluminum Ni-Resist pistons are now marketed as original equipment and replacements for both gasoline and Diesel engines in trucks, buses and tractors.

We welcome the opportunity to give you counsel and data on the use of Ni-Resist for this and other uses in industry.



A NI-RESIST INSERT . . .
bonded into aluminum alloy piston by the Al-Fin process.

Standard aluminum alloy piston
which failed in the top ring groove.



Over the years, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET
NEW YORK 5, N. Y.

***NEW* Pettibone Mulliken TRAK-KLEENER** **Does Work of 200 Men**



Rear view of TRAK-KLEENER proceeding down center of track removing and discharging refuse material into cars of work train on adjoining track.



The winged scraper of TRAK-KLEENER funnels refuse dirt into path of dragger-back blades which speeds it onto the conveyor belt and into work car.



TRAK-KLEENER is an "off-track machine." Its 513x24 tires make it easily maneuverable in and across yard track or uneven terrain.

FAST • THRIFTY • THOROUGH

Fluid Drive • Hydraulic Crowding • Self Feed • Self-Propelled

The new Pettibone Mulliken TRAK-KLEENER offers many operating features such as:

- Cleans and loads at speeds varying from 0' to 80' per minute.
- Operates faster than any other method and reduces tie-up of tracks to a minimum.
- Leaves a clean, level floor . . . a great asset for drainage and safety of yard crews.
- Loading capacity: 5-8 cubic yards of loose material per minute . . . averaging 3 carloads per hour.
- Operated by one man.
- Drastically cuts loading (idle) time of work train.

ALL SEASON USEFULNESS!

Loading from Stock Piles
Excavating and Digging
Leveling
Snow Removal


Visit

The PMCO TRAK-KLEENER Exhibit
Booths No. 31 to 36
Track Supply Association Convention
Chicago Coliseum
September 18, 19 & 20

Since 1880

PETTIBONE MULLIKEN CORPORATION

4700 West Division Street, Chicago 51, Illinois



CONCRETE pile and slab trestles give high load capacity, low maintenance

IN 1947 the Seaboard Air Line Railroad began a trestle replacement program on its high-density traffic lines. This program was necessary because existing timber structures were reaching the end of their useful life and maintaining them was costly.

To assure long life, low maintenance and high load-carrying capacity, Seaboard engineers chose concrete pile and slab construction. To date four precast concrete pile and slab trestles—totaling 3,415 linear feet—have been completed.

For all but the first installation three-pile bents were used, every fifth being an anchor bent of six piles in two rows. The octagonal piles are 20 in. in diameter and 30 to 50 ft. long.

Many other American railroads have found that concrete piles are ideal for bridge replacement because they provide:

- **ECONOMY.** Concrete pile and slab trestles can be built at low cost per ton of load capacity. Maintenance is reduced to a minimum.
- **ADAPTABILITY.** Concrete trestles can be designed to meet almost any variety of climatic, topographic and service conditions.
- **DURABILITY.** Concrete piles deliver long years of trouble-free service. They defy decay, termites and other borers.
- **FIRESAFETY.** No need to gamble on service interruptions resulting from costly fires which can be avoided. Concrete can't burn!

For more information write today for free, illustrated, 80-page booklet, "Concrete Piles." Distributed only in the U. S. and Canada.

PORTLAND CEMENT ASSOCIATION

DEPT. 9c-26, 33 W. GRAND AVE., CHICAGO 10, ILL.

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Above photo shows reinforced concrete piles being driven on 622-ft. trestle spanning the South Slough of the Altamaha River south of Savannah, Ga. Templates at deck and ground levels used to insure proper alignment of the piles.

Lower photo shows precast concrete piles awaiting installation along old trestle. Special construction track minimized loss of time in clearing for passing trains.



**You have
tried this**

TRAINING PROGRAMS
for freight-handling and classification-yard personnel are now a regular part of the lading damage prevention work on many leading railroads. This type of prevention effort has had excellent results.

**BUT IT'S
NOT ENOUGH**

**lading damage
PREVENTION
starts here**

No amount of training will prevent the over-solid impacts of starting, stopping and coupling that damage cars and destroy lading. Lading damage prevention starts with the cushioning of the car itself. The forces of impact are minimized when cars are protected with Waughmat Twin Cushions. Waughmat Twin Cushions never go solid . . . they have no solid point. Resilient rubber takes the bite out of impact. In pull or in buff, Twin Cushions are always cushioning . . . always providing protection. This protection has been amply proven in millions of miles of stock car and box car freight service. Specify Twin Cushions on your next car order. You'll save the extra cost quickly in reduced damage claims.



TYPE WM 4-6
A.A.R.
APPROVED

WAUGH EQUIPMENT COMPANY
New York • Chicago • St. Louis • San Francisco
Canadian Waugh Equipment Company
Montreal

WAUGHMAT
Twin Cushions

TRADE MARK REGISTERED

NEW Honeywell ECONOMY Car Heating System

with Electronic Moduflow

Economy

- MUCH LOWER FIRST COST, \$888 COMPLETE IN A PACKAGE, F.O.B. MINNEAPOLIS.
- MUCH LOWER operating cost, steam saving up to 40% with a minimum of undercar piping.
- LESS MAINTENANCE, fewer parts, simplified design, faster, easier installation.
- USES EXISTING floor heat surfaces—new floor heat surface available if wanted.

Simplicity

- JUST ONE reducing valve per car.
- JUST ONE operating heat valve per car (no floor heat valves)—motor driven, ends sticking valves.
- THE SIMPLEST control panel you've ever seen.
- STANDBY OPERATION without circulators—without electricity—the safest and simplest yet.
- NO NEED to zone for steam distribution—the simplicity of hot water.

Comfort

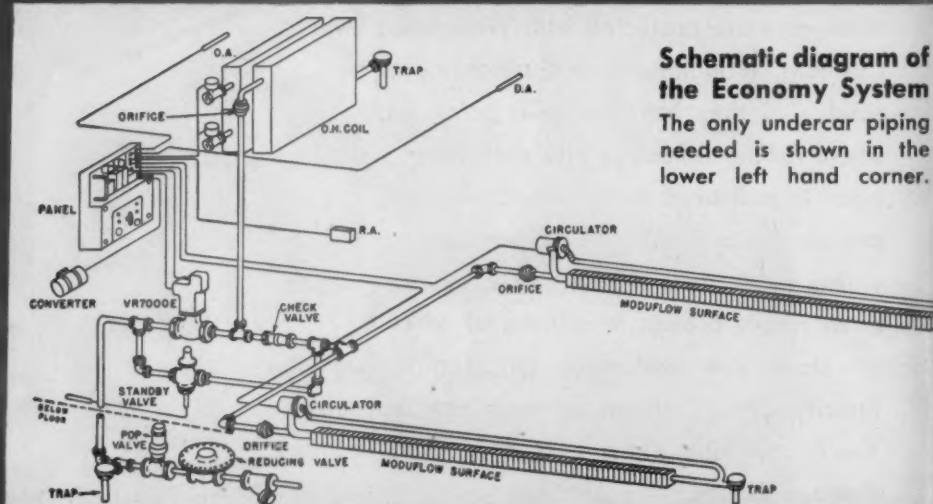
- SUPER SENSITIVE electronic thermostats assure accurate temperature control.
- CORRECT FLOOR HEAT distribution for all-over car comfort. Window seats just as comfortable as aisle seats—and the extra comfort of hot water.
- MODUFLOW PRINCIPLE constantly balances heat supply to heat loss, replaces old on-off too hot, too cold method.
- AUTOMATIC CHANGEOVER from heating to cooling and back as conditions require.

LOOK! economy coming and going—a complete car heating system at less than half the first cost of an ordinary system... savings in steam that could run as high as 40%... less maintenance and superior performance. Now, for the first time, you can equip your trains with a heating system that pays for itself — QUICKLY.

HERE'S your answer to substantially lower car heating costs for new trains. And you have a new, practical solution for cars too old to justify other improvements.

This new Honeywell system has fewer components. Installation is easier, faster—you can even use old floor heat surface on most cars. Only a few feet of undercar piping are used. That cuts steam waste right to the bone. You save money every mile of every run.

In performance, your passengers enjoy the superior comfort of Electronic Moduflow. The modulating principle of heat supply assures all-over, all-the-time comfort. Electronic thermostats provide the quick response needed to hold this comfort line regardless of load changes or weather effects. Nothing else can offer so many advantages—such important savings. Get the full story of Honeywell's new Economy Car Heating System now. Simply address Transportation Division, Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Toronto 17, Ontario.



Schematic diagram of the Economy System

The only undercar piping needed is shown in the lower left hand corner.

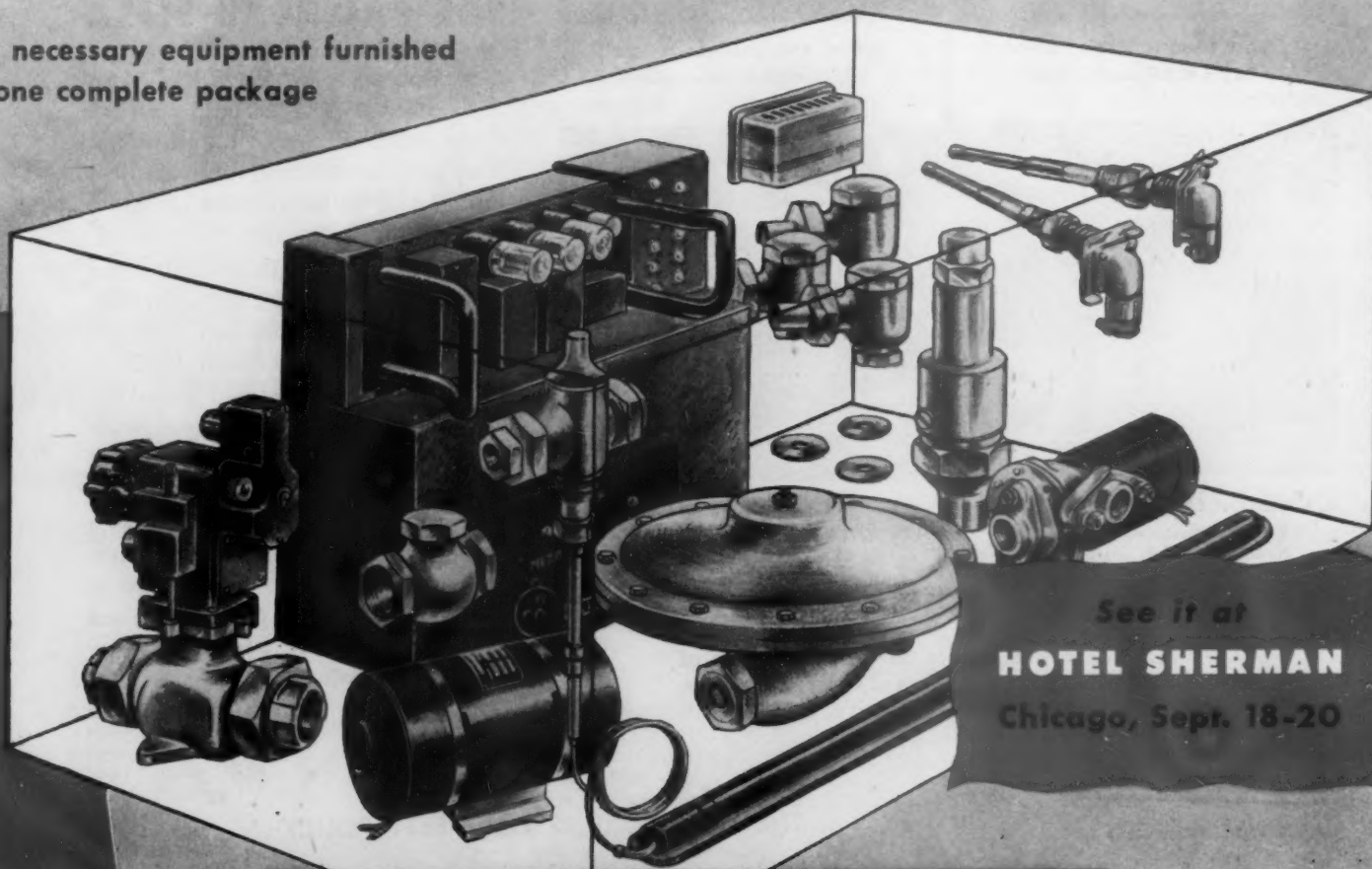
● THE FIRST BIG ADVANCE IN CAR HEATING SINCE STEAM HAS BEEN USED... FITS 99% OF CARS... OLD OR NEW!

ar Heating System

**SAVES
ON
STEAM** (UP TO 40%)

Pays for Itself! Much lower first cost. Much lower operating cost. Honeywell's Economy Car Heating System pays for itself in savings while it demonstrates its advantages to you.

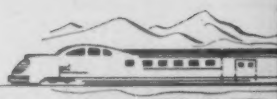
All necessary equipment furnished
in one complete package



See it at
HOTEL SHERMAN
Chicago, Sept. 18-20

MINNEAPOLIS
Honeywell

TRANSPORTATION DIVISION
Serving the Railroad Industry





STATION STANDBY POWER
Cincinnati Union Terminal Co.



SUBMARINE CABLE
ERIE R.R., Jersey City, N. J.



YARD LOUDSPEAKER SYSTEMS
B&O's Riverdale, Ill. yards



SIGNAL AND CONTROL CABLES
B&O's Willard, Ohio yards



STATION AND TERMINAL WIRING
Main Terminal, Chicago &
Northwestern R.R. (Installed 1910)



**CAR LIGHTING AND AIR
CONDITIONING**
CB&Q's Vista Dome cars

OKONITE CABLES

*... used with
confidence*

THROUGHOUT THE RAILROAD FIELD

More than 60 of the Class 1 American Railroads are using Okonite insulated cables for their many electrical needs. They have learned from experience that in railway installations there can be no compromise with quality.

And Okonite is a quality cable from conductor to covering. The Okoloy coating prevents copper corrosion. The Okonite insulation, made from Up-River Fine Para Rubber, possesses unequalled electrical stability. The Okoprene sheath defies weather, oil and heat and will not support combustion.

For over 72 years cables insulated with Okonite have been establishing remarkable service records. Some of the uses in which Okonite cable is giving day-in and day-out trouble-free performance are shown at the left.

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THIS WAR IS DIFFERENT

The current war and its prospective further development present a different problem from any with which the American people, including railroad people, have ever been confronted. Among the most noteworthy of these differences are the following:

What the Differences Are

(1) This time, the enemy is doubtless planning to attack, sooner or later, American lives and property right here on this continent—the equivalent of invasion. This is a danger this nation has never had to face since 1815. American cities, industries, and transportation facilities may thus be subjected to direct war damage—and certainly to the likelihood of destruction by sabotage.

(2) Prior to actual attack on this continent, we have no way of knowing where else we may be attacked first, as we have been in Korea. Consequently we cannot know in what areas concentrations of traffic may occur.

(3) The contest may last for a long time—possibly a decade or more—and develop into a test of endurance.

(4) In World Wars I and II this nation was not a ringleader at the outset. We came in as the ally of other nations already engaged. This time, we are one of the original contestants; and we do not know with any certainty whether we shall have any powerful allies or not.

(5) When World War II began there was on the railroads a large car surplus and a large surplus of manpower. Today, with war production only in its incipient stages, there is already a serious car shortage and a steel shortage—with a shortage of manpower and other materials in early prospect.

(6) In World War II American industry and the railroads were working a 48-hour week. Now, the week has been reduced to 40 hours (as compared to a 60-hour week in Russia, incidentally).

Other differences could be cited, but the foregoing are sufficient to justify beyond all doubt the conclusion that civilian lives and property are imperiled to a degree never before known, and hence hard to appreciate. This nation has engaged in several wars, but never before in one where its very existence was so plainly at stake as in this one. These Communist enemies are not civilized warriors like the British or "Hessians" who confronted George Washington; or the Spanish monarchy with which we fought in 1898; or the Hohenzollerns in 1917; or even the German army of the 1940's (Nazi zealots excepted).

Such considerations as these are not afieid from railroading, but are of the very essence of present-day railroad planning and railroad management. The railroads are vital participants in carrying on this war. The out-

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come may very well hinge on the effectiveness of our transportation machine—which every competent transportation man knows to be suffering today from a chaotic waste of manpower and capital goods.

Railroads are forced to keep trains running, handling little dabs of people and freight, because permission to abandon such wasteful services cannot be secured. Trucks are engaging in long-hauling freight at a colossal waste of manpower and vehicles, simply because unequal regulation does not permit the railroads to compete equitably for traffic they are able to handle most economically. Inadequate highway facilities are thus congested beyond all reason, necessitating expenditures of additional billions for highway construction—funds and materials which, in the national interest, might better go into munitions. Many states have legalized axle loads on their highways in excess of those which the highways were built to withstand; and few states adequately enforce even these over-liberal limitations—thereby hastening the destruction of highways which the nation may need badly before the ordeal we have now entered upon has come to an end.

The railroads are not now equipped as well as they should be—because of the less efficient use of equipment resulting from the inauguration of the five-day week, and because they have been too impoverished, and their prospects have been too dark until recently, to justify or permit larger expenditures. Yet the Department of Justice (so-called) persists in its suit to impoverish them still further. No legislation has been enacted to direct the regulating authorities to see to it that railway charges rise *quickly* to match the inflation in their costs. Congress continues to vote fantastic sums for canalizing rivers—where prospective traffic is so trivial that, in order to give a favored shipper a gift of \$1 in reduced freight charges, \$10 or even \$100 of public money has to be spent. It would usually be cheaper to make a direct appropriation from the national treasury to pay a part of the freight charges of such shippers, provided they use existing transportation facilities.

Is it to be expected that we are going to win quickly a test of endurance with an enemy as resourceful, as determined, and as hard-working as these Communists—when we persist in throwing away our labor and our capital goods the way we are throwing them away in transportation?

Unavoidable Responsibility

There will be some who will say that shippers and railroad people are too busy finding cars, moving them, and loading and unloading them to be bothered about the comparatively few institutional changes necessary to conserve the time of a couple of hundred thousand men and a couple of billion dollars or more annually, now being wasted in uneconomic transportation. That excuse might be valid if the situation confronting us were a matter of a year's duration. But those most qualified to judge are unanimous in the belief that our ordeal will

be with us much longer than that. In an endurance contest, it is obvious that the likely winner will be the one who makes the wisest disposition of his resources.

As trustees for the nation of that part of its transportation resources most necessary to victory in the vital and prolonged contest in which the nation is now engaged, the leaders of the railroad industry have an unavoidable responsibility to point out forcefully and persistently to government officials and to the public the irreducible minimum of legislative changes necessary to enable the railroads—and all transportation—to function at top efficiency during the next decade.

Order and economy are denied to the transportation industry in times of peace because the problem is not sufficiently acute to inconvenience people, and thus awaken them politically. In time of war the establishment of order and economy is postponed because everybody is too busy doing something else. But this war is different, and it had better lead to different handling of transportation too—because this is one war we *could* lose. It is not one we can afford to lose.

BETTER EARNINGS AND HIGH STOCK PRICES

Railroad stocks on the Dow-Jones average reached a figure of almost 67 on September 12—which was the highest average attained since 1946, when the index went slightly above 68. The 1946 figure was the “peak” for all the years since 1931, which was the last time that the average price of railway stocks has been higher than 100.

The movement of the price of stocks reflects, of course, the improvement in railway earnings. Operating revenues in July were about 10 per cent larger than in July, 1949, while operating expenses were up less than 2 per cent. For the seven months, while gross revenues still fell short of the 1949 total for the same period, net railway operating income rose almost 19 per cent. Net income was up more than 100 per cent in July, and was higher by one-third for the seven months than in the equivalent 1949 period.

This development in earnings and in stock prices is gratifying, but it is not nearly as favorable as it should be. When a sick man has a temperature of 104 deg. and it drops to 102 deg., he feels a lot better—and so do his doctor and his friends—but it would be foolish in the extreme for any of them to conclude that the patient has recovered his health. That conclusion can be justified only when the temperature reaches normal and stays there for a period long enough to establish the probability of permanence. The same caution is needed in rejoicing over the turn which railroad earnings and stock prices have taken.

There is this definite “plus” in the situation, though—the improved earnings will give the railroads a lot more

money than they have had heretofore with which to purchase badly needed new equipment and other improvements for handling more traffic more expeditiously. Improved traffic and prospects, moreover, should remove for a considerable period any fear on the part of most railroad employees that they will be laid off—hence putting in abeyance any justification for further “make-work” efforts.

COAL ECONOMY DECLINES

A concrete conception of the revolution which the rapid accession of Diesel-electric motive power has caused on the railroads is afforded by a review of the transfer of locomotive-miles from steam to Diesel since 1945 and the effect this has had on the amounts of coal, fuel oil and Diesel fuel consumed.

Of the 62.5 million locomotive-miles per month averaged in freight service during 1945 on the Class I railways, 58.2 million — 93 per cent — were made by steam locomotives. During the first four months of 1950, the total monthly mileage was 43.5 million, of which steam made only 61.5 per cent, or 26.7 million miles. The overall decline in steam locomotive mileage during the period was about 54 per cent.

Compared in like manner, steam locomotives in passenger service did a monthly average of 34.2 million miles in 1945, which was 86 per cent of the total, and 11.1 million miles during the first four months of 1950. This was 43 per cent of the total and represented an overall decline in steam mileage of more than two thirds.

During 1945, 6.3 million tons of coal were burned on steam locomotives in road freight service and 1.9 million tons on steam locomotives in road passenger service, a total of 8.2 million tons in road service. During the first five months of 1950 coal consumed in road freight service was 3.2 million tons and in road passenger service 0.6 million tons, a total of 3.8 million. This is a decline of 41 per cent—nearly $4\frac{1}{2}$ million tons of coal per month.

During 1945 the average monthly consumption of fuel oil on steam locomotives in freight service on the Class I railways was 241.2 million gallons and in passenger service 92.7 million gallons, a total of 333.9 million gallons in both services. The averages during the five months of 1950 were, respectively, 121.7 million gallons, 39.8 million gallons, and 165.5 million gallons. This is a decline of 51.5 per cent.

In the meantime Diesel fuel consumption in both services increased from a monthly average of 27.1 million gallons in 1945 to 128.2 million gallons during the first five months of 1950, $4\frac{3}{4}$ times as much as during the earlier period.

These comparisons indicate the strikingly rapid changes which have been taking place in fuel consumption during a short period of less than five full years. They do not reflect any changes in the economy with which any of the three fuels are consumed. Well-defined changes have

taken place, however, in the economy with which coal is being burned both in freight and passenger service. During the 12 months of 1941 the average coal consumption per 1,000 gross ton-miles of freight-train movement was 113 lb. In 1945 the average increased to 123 lb.; it was 122 in 1949, and 127 during the first five months of 1950. This represents an increase of 8 per cent over 1941 which took place gradually during the war and from which no recovery has been made since. The effect is even more marked in passenger service where, from 1941, the increase in fuel consumption per passenger-train car-mile has been more than 20 per cent.

The change has been much less marked with respect to fuel oil burned on steam locomotives, amounting to a total of 5 per cent in 1949 over 1941, and the unit consumption of Diesel fuel has shown little change since 1945.

The decrease in coal economy during the war was partly due to the difficulty of securing adequate supplies of locomotive fuel of the desired quality. The rapid Dieselization of the railroads which has taken place since 1945, with the accompanying loss of interest in improving steam locomotive operation, has led to the perpetuation of coal supplies less than the best. The decreasing proportion of steam locomotive service, furthermore, accentuates the effect on the total of the marginal services still handled by steam which inherently cause low fuel economy.

Can the railroads afford to be content with continued low fuel economy in steam locomotive service? The economy of double-screened coal, for instance, has been too frequently demonstrated to leave any doubt as to its value. Special effort is needed to overcome the effect of carelessness growing out of a loss of interest in steam locomotive performance; and it must be inspired from the top.

“MURDERING OUR ROADS”—The American Association of State Highway Officials, which represents the highway departments of all the states, has approved an important resolution concerning vehicle size and weights. It points out that the rapidly rising cost of highway maintenance is due largely to excessive loads and the failure of commercial truckers to comply with “very liberal maximum standards.” It then recommends that each state initiate a “vigorous, fearless, and sustained program of law enforcement,” and that all states adopt proper size and weight laws.

This matter comes home to everyone who uses our highways—or through taxes, helps pay for them. The heavy-truck problem has reached the critical stage. As an example, the chief engineer of Oregon’s highway commission has recommended that the state reduce its construction of new highways by half. This is because the cost of repairing and strengthening existing highways is cutting deeper and deeper into available funds. He said further that the great damage to the highways has resulted from increasing trucking coupled with persistent overloading by some operators. These operators, apparently, overload as a matter of policy and regard the fines they pay as part of their overhead. And all the taxpayers must pay through the nose to repair the destruction their vehicles cause.

Practically every state, judging by engineering reports, has a highway problem — and it is growing worse season by season. To protect our pocketbooks — and our lives as well — we must crack down hard on cynical operators who pay no attention to the law. And where the law is weak, it must be strengthened.—*St. Johnsbury (Vt.) Caledonian-Record*

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Good Housekeeping—the Key to FIRE PREVENTION ON DIESELS

Gulf, Mobile & Ohio experience indicates the need for carefully developed method involving periodic attention and checking

By C. M. HOUSE

General Superintendent Motive Power and Equipment
Gulf, Mobile & Ohio, Mobile, Ala.

The Gulf, Mobile & Ohio operated its last steam power on October 15, 1949, and became one of the first Class I railroads to be fully Dieselized. Experience with Diesel-electric locomotives as prime movers on the railroad began, however, back in 1936 in passenger service. It is only during the past three or four years that rapid change-over has provided Diesel equipment for all services.

At present the G. M. & O. operates 243 Diesel locomotives, including 132 freight, 16 passenger units, 12 passenger-freights, 83 switch and 8 Diesel-electric motor rail cars.

Many Changes in Practice

The conversion of a railroad from steam to Diesel power necessitates many changes in practices which have been in effect since railroading began. Personnel must become familiar with an entirely different type of equipment. Maintenance, service and repair facilities must be altered to meet new requirements. Lubricating oil and fuel oil replace coal and water as the major supplies in the operation of the prime movers.

With only a few Diesel locomotives in operation, it is comparatively easy to organize maintenance schedules, and with the development of improved Diesel parts, fuels and lubricants, economical and efficient operation are possible.

Cleaning Sometimes Sacrificed

After a road becomes fully Dieselized and especially when officers are under pressure to keep maintenance expense down in spite of spiraling labor costs, the cleaning of Diesel locomotives is sometimes sacrificed. This condition of poor housekeeping not only affects the overall appearance of Diesel power but above all contributes to fire hazards and inefficient preventive maintenance. As Diesel equipment becomes older, the locomotives are more subject to lubricating-oil, fuel-oil and exhaust-gas leaks, necessitating more effort to maintain cleanliness.

Fire prevention, in our opinion, can best be brought about by good housekeeping on locomotives. The cost of fire insurance for Diesel equipment is high and if Diesels are maintained absolutely clean at all times a reduction in premiums may be effected.

Although all G. M. & O. personnel concerned with the maintenance of Diesels were aware of the importance of

This article consists essentially of a written discussion of the committee report on locomotive construction, presented at the annual meeting of the Mechanical Division of the Association of American Railroads at Chicago, June 26 to 28.



How cleaning solution is applied in back of Diesel fuel pumps with air-operated spray gun



Left—Engineroom ceiling panels—Light areas have been sprayed with cleaner and rinsed with water. Right—Hot water and cleaning-mixture drums—Air and solution lines have three outlets along the platform

maintaining clean equipment, it was finally realized that in developing overall maintenance programs the cleaning instructions had been badly neglected.

The Cleaning Problem Surveyed

It was decided to make a survey of the entire railroad, studying the availability of Diesels at different terminals for maintenance and the manpower available to perform the work. A study was made also of the different types of cleaning materials available and methods of application, giving preference to cleaning equipment and material which would clean satisfactorily with a minimum amount of hand labor.

Fourteen terminals were selected to perform heavy cleaning on Diesel units. The cleaning program was divided into three phases: (1) external car body; (2) engine, engineroom and engineroom equipment; and (3) underframe (traction motors, trucks, fuel tanks, etc.).

Car Body Cleaning.—The exteriors of the Diesels are hand washed using an acid type cleaner, and rinsed clean with fountain spray brushes. A material was selected that was found least corrosive to metals. Where available, the Diesels are run through a conventional car-washing machine with satisfactory results. Some of the Diesels on the main line are washed daily.

Engineroom and Equipment.—Engineroom cleaning previously had been done by hand wiping with occasional hand washing of ceiling and walls. It was found that many places around the Diesel could not be reached by this method. The points that were the potential fire hazards were not being cleaned.

An air-operated spray gun was adopted to apply a mixture of grease-solvent material and Diesel fuel on practically every square inch of Diesel engine, accessories, ceilings, walls, and floor. This material is non-toxic and not injurious to paint. Canvas hoods are placed on several parts of electrical equipment to prevent damage. After allowing the material to soak for several minutes, the

same gun is used to spray hot water over all surfaces, removing dirt and soil. The spraying is started at the ceiling and washing proceeds progressively down to the floor. It is sometimes necessary to wipe ceiling and walls dry. Engine, compressor, air-brake equipment, filter tank, oil cooler, etc., are not wiped. All material on the floor is washed out the drains or mopped up. It is the intention to include heavy cleaning of Diesel interiors on the regular monthly form.

Underframes and Gear.—The underframe and gear, including fuel tanks, traction motors, trucks, and bottom of the carbody bed, are sprayed with a grease-solvent type cleaner mixed with Diesel fuel oil. After allowing this material to soak for several minutes, all parts are flushed with hot water or steam under high pressure. Terminals that already had high-pressure truck-cleaning apparatus continue to use this equipment for flushing.

A trained crew spent several days at each terminal, supervising the installation of necessary equipment and training the cleaning forces. This results in uniform cleaning procedures at all terminals. Daily reports are furnished a central office where the progress of cleaning can be closely followed.

The benefits have been many fold. Maintenance forces are better able to make efficient inspection of equipment. The morale of these forces has been improved by cleaner working conditions. Oil leaks are more readily discovered and corrected. It has not been found necessary to increase the cleaning forces to accomplish this extra work. Management furnished the necessary equipment, cleaning material and cleaning procedure. The maintenance forces do the work.

Crankcase Explosions

It is the writer's belief that the G. M. & O. is the first railroad to organize a uniform cleaning program for the entire system.

It is also our thought that a lot of disastrous fires



Left—Equipment and fan-type spray used in applying cleaning solution to trucks and other underneath parts. Right—How Diesel locomotive exteriors are cleaned at points where a mechanical washing machine is not available

occur on locomotives from crankcase explosions. Standard instructions have been developed for preventing them.

A review of Diesel performance on the G. M. & O. for 1949 discloses that we experienced five mild crankcase explosions on the Northern region. They are classified as mild for the reason that only the top deck covers were dislodged and that the crankcase and air-box covers remained intact. No personal injuries were experienced, but they did produce serious train delays.

On the Southern region, no explosions were experienced but investigation of delays indicated at least seven instances when engine conditions existed conducive to crankcase explosions.

We all are familiar with the primary cause of crankcase explosions, namely the vapors in the crankcase becoming mixed with air in the proper proportion and coming in contact with a flame or an overheated part sufficiently hot to ignite the vapors.

A study of crankcase explosions indicates that violent explosions are most likely to occur during a reduction of engine speed, stopping an engine or after an overheated engine has been shut down.

Therefore, if an engine has any overheated parts in contact with the crankcase vapors it is inadvisable to loiter around the engine, to remain near it longer than necessary to shut it down, or to attempt to remove the top deck, air-box or crankcase covers for at least one-half hour after shutting it down.

We have little control over the mixture of vapors with air in the crankcase but we can prevent flames or overheated parts from coming in contact with the crankcase vapors. The most common conditions which produce crankcase explosions are piston seizures, excessive piston blow-by, failure of oil supply due to plugged screens or oil lines, contamination of lubricating oil with water or fuel oil, causing bearings to overheat, misalignment or misapplication of bearings resulting in overheating of the bearings and shafts, metal in the oil system causing bear-

ings to overheat, misalignment of piston oil-cooling pipe (Electro-Motive only).

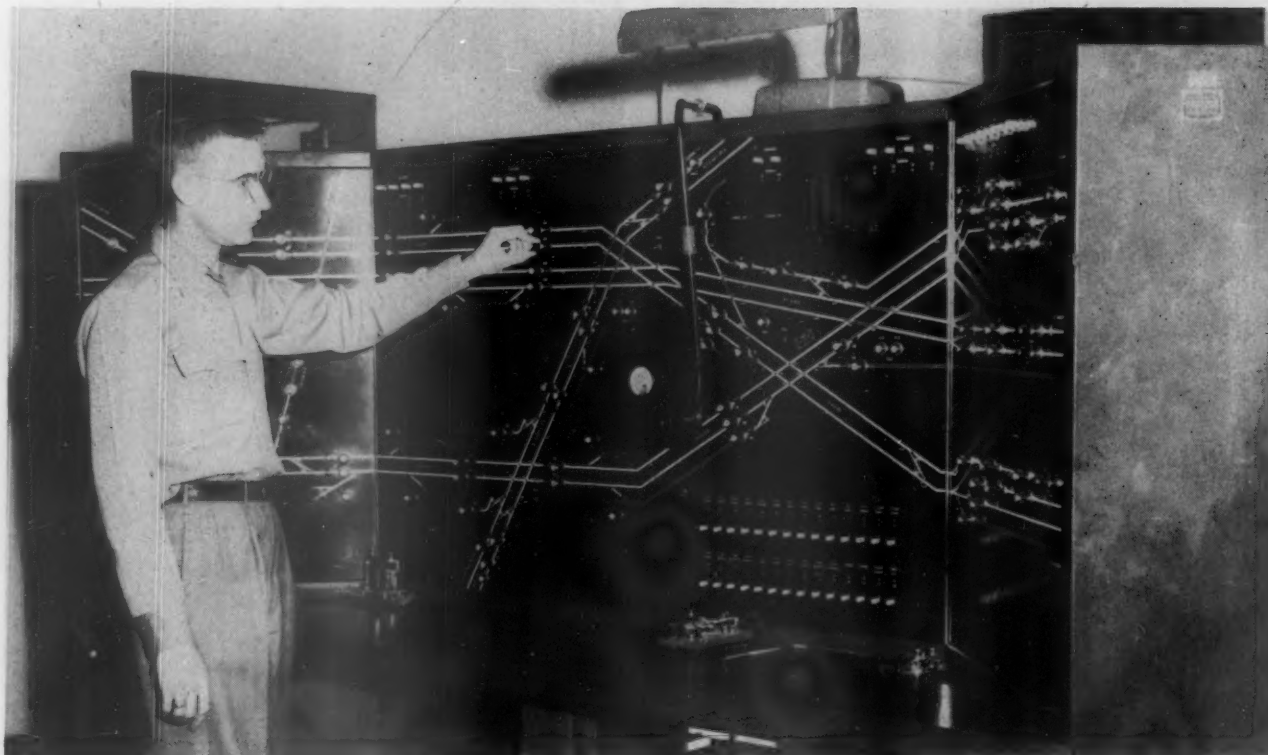
All of these are the result of mechanical conditions which can be located by rigid inspection and corrected by proper maintenance. The elimination of crankcase explosions therefore can be attained by maintaining Diesel units in proper mechanical condition, thorough periodic inspection and doing the required maintenance.

Mechanical Defects Must Be Corrected

We must not allow ourselves to become satisfied with careless inspection practices or shoddy workmanship and certainly must not operate units which are known to be in a defective condition, since sooner or later such practice will result in disastrous consequences.

The matter of potential crankcase explosions is of such great importance that we continually impress upon subordinate supervisors the importance of keeping Diesels clean, making thorough periodic inspections and correcting all defects that are in any manner conducive to increasing the potential risk of explosion. All of these instructions are in the hands of Diesel supervisors, master mechanics and foremen, who periodically instruct the maintainers and admonish them to follow closely practices which tend to eliminate crankcase explosions.

Everyone knows the disastrous results sometimes experienced from the explosion of boilers on steam locomotives. Close supervision and checking is required of all boilers and boiler appurtenances, especially feedwater apparatus, related piping, hose and tank strainers, and instructions must be kept current and followed through to see that conditions causing boiler explosions do not occur. It looks as though a potential hazard involved in operating Diesel locomotives, analogous to steam boiler explosions, is that of crankcase explosions, so we believe it is necessary to follow through, keeping personnel just as alert in the maintenance and operation of Diesels as was our practice with steam power.



The new interlocking machine at Fostoria is the NX entrance-exit type, and controls 68 signals, 32 power switches and 11 electric switch locks

New Interlocker Saves 91,250 Train Stops Annually

At Fostoria, Ohio, 35 miles southeast of Toledo, the New York Central, in collaboration with the Baltimore & Ohio, the New York, Chicago & St. Louis, and the Chesapeake & Ohio, has installed a large NX entrance-exit interlocking, involving an extensive network of tracks which criss-cross at that point. Placed in service at a total cost of \$950,000, which was shared proportionately by the four railroads involved, the project also included the installation of new automatic short-arm gates and/or flashers at 14 highway crossings in the plant area.

A Busy Spot

The lines involved include the main line of the N. Y. C. between Toledo and Thurston; the B. & O. between Chicago and Akron; the main line of the Nickel Plate between Fort Wayne, Ind., and Bellevue, Ohio; the Lake Erie & Western line of the Nickel Plate between Sandusky, Ohio, and Lima; and the main line of the C. & O. between Columbus and Toledo. All these lines are double-track through the interlocking except the L. E. & W., which is single track. Daily traffic averages 6 through passenger trains and 17 freights on the N. Y. C.; 14 passenger and 35 freights on the B. & O.; 6 passenger and

Installation in Fostoria, Ohio, is at complicated crossing of four railroads over which move about 300 trains daily

19 freights on the two lines of the N. Y. C. & St. L.; and 4 passenger and 32 freight trains on the C. & O.—a total of 133 trains. Speed limits through the plant are 30 m.p.h. on the N. Y. C. and the C. & O., 45 m.p.h. on the B. & O., and 50 m.p.h. on the Nickel Plate.

In addition to through traffic, there are about 180 switching movements daily, bringing the total number of train movements through the interlocker up to approximately 313 every 24 hours. The N. Y. C. maintains one yard engine and crew in Fostoria on an 8-hr. shift daily; the B. & O., the same; the N. Y. C. & St. L., three engines and crews on three 8-hr. shifts; and the C. & O., two engines and crews on one 8-hr. shift and one engine and crew on three 8-hr. shifts.

Under the previous method of operation, through trains on all roads were required to make two stops in each direction, in addition to station stops. Tilting-

crossbar signals and statutory "Stop" boards were in service, and signalmen were on duty 24 hours daily at the C. & O.-B. & O.-N. Y. C. crossing; B. & O.-Nickel Plate; Nickel Plate-C. & O.-N. Y. C.; and the C. & O.-L. E. & W.-N. Y. C. crossing. A 24-lever mechanical interlocking which was in service at the B. & O.-L. E. & W. crossing was retired as part of the project.

In frequent instances before the new installation was made, the signalman at one crossing would be ready for a train movement, but the signalman at the second crossing would not, because of his crossing being occupied by another train. Consequently, the train would be advanced to the second crossing and stopped, in its turn blocking other crossings. As a result, trains piled up behind one another, tied up additional trains on other roads, and blocked highway crossings in Fostoria for extended periods. Long freight trains had to be cut in two to clear these crossings frequently, and drawbars were often pulled in getting them started again. Trains were thus delayed up to 50 minutes—the principal reason for the decision to install the new plant.

Trains Expedited

Comparing the present method of operation with that formerly in effect, based on 133 through train movements daily, and assuming that all these trains cleared each other through Fostoria, which they do not necessarily, the elimination of two stops for each train on all roads by the new plant would amount to a total saving of 266 stops daily, or 97,090 stops annually. Taking understandable delays into consideration, however, a conservative estimate of the stops saved would be 250 daily, or 91,250 annually. In addition, through trains are now saving anywhere from 15 to 30 minutes in getting through Fostoria. With 133 such movements daily, this represents a total saving in train time of from 33 to 66 hours daily, or 12,136 to 24,272 hours annually.

The new signals on the N. Y. C., Nickel Plate and C. & O. are the color-light type, and those on the B. & O., the color-position-light type. Switch machines are designed for operation on 110 volts d.c. The interlocking machine, which is sheltered in a new building, known as Tower "F," is of panel-type construction with the conventional arrangement of NX entrance-exit knobs and buttons, track diagrams, magnetic route indicators and indication lamps. This type machine, which controls 68 home signals, 32 switch machines and 11 electric locks on hand-throw switches in interlocking limits, was chosen primarily to eliminate individual-lever operation, and thus facilitate and expedite overall manipulation of the

machines—an important factor in keeping trains moving through the busy layout, where there is a movement every few minutes.

The machine consists of a 3- by 5-ft. center panel with a 3- by 2-ft. wing at each end. White track-occupancy lamps and red lock lamps are normally extinguished. Red lock lamps are lighted when routes are lined for train movements, a route normally being lined by operation of the signal knob at the entrance of the route, and by pushing the exit button at the end of the route. When the switches in the route have completed their movement and the home signal has cleared, a green lamp in the signal knob is lighted until the signal is accepted by the train, or taken away by the towerman.

New Tower Built

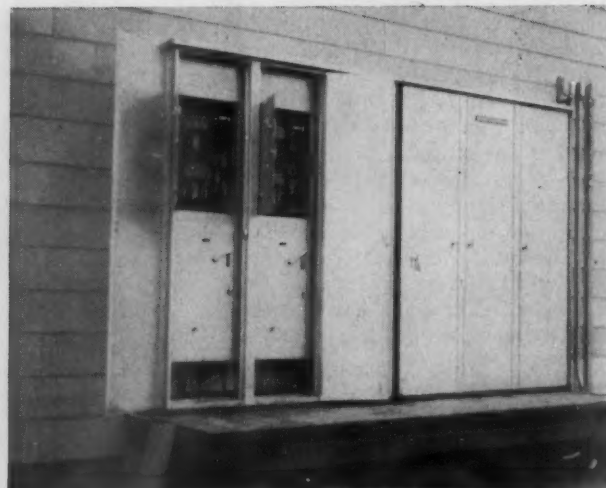
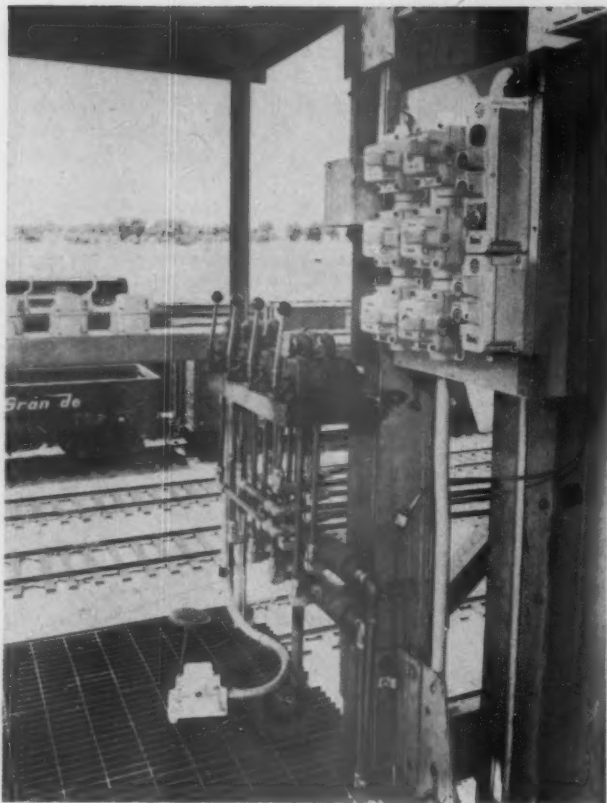
The new tower, which shelters the interlocking machine, relay and battery room and maintainers' headquarters, is of complete fireproof brick, precast concrete and steel-beam construction. A furnace room and the maintainers' headquarters are located at one end of the building, and directly over these rooms is the room which contains the machine. This room has a sound-proof tile ceiling with flush-mounted electrical lighting fixtures, and Thermopane glass is used in the windows to prevent glare and fogging. The floor, formed from precast concrete slabs, also serves as the ceiling for the rooms below. A single-story extension of the building, in which precast concrete slabs form the ceiling and roof houses the relay and battery room. The building is heated by thermostatically controlled oil heat, the furnace, burner and controls having been furnished by the American Radiator & Standard Sanitary Corp.

As part of the interlocking project in Fostoria, modern Model-10 automatic short-arm electric gates and flashing-light signals were installed at nine crossings, and flashers only at five crossings. Each gate and flasher assembly includes, from top to bottom, a standard cross-buck sign, number-of-tracks sign, "Stop on Red Signal" sign, and the gate mechanism.

This plant and highway crossing protection was placed in service under the jurisdiction of H. D. Abernethy, assistant signal engineer of the New York Central, the regular signal construction forces of all roads involved participating in the work. The major items of signal and interlocking equipment were furnished by the General Railway Signal Company, and the highway crossing protection by the Western Railroad Supply Company. A detailed description of the project appeared in the July *Railway Signaling and Communications*.

New automatic short-arm gates and/or flashers were installed at 14 highway crossings in the area of the new interlocking





Icing machine control position

Branch circuit control cabinets

Machines Ice Two Cars Per Minute

Denver & Rio Grande Western installs highly mechanized facilities for icing refrigerator cars at Denver, Colo.

Refrigerator car icing facilities recently placed in service by the Denver & Rio Grande Western at Denver, Colo., include storage facilities, 3,600 ft. of low-level loading platform or ice dock, and two loading machines which break the ice to the size needed for each car and mix in the required amount of salt as the ice goes into the car bunkers. The loading machines are self-propelled and each one is capable of filling the average bunkers in a car in 50 seconds. Allowing 10 seconds to move from one car to the next, it is possible for one of the two machines to ice cars at the rate of one per minute.

How Cars Are Iced

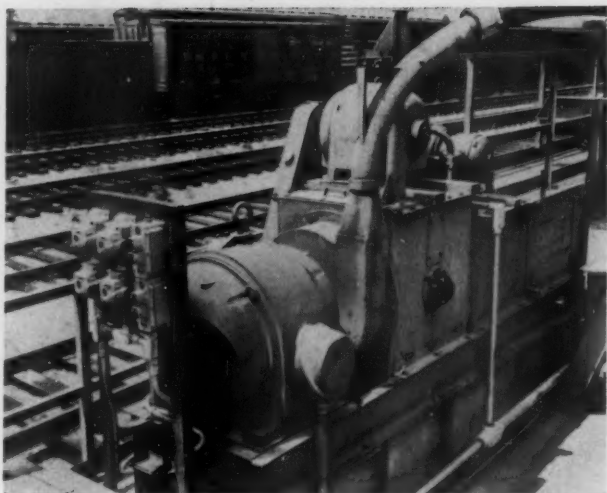
Natural ice from nearby mountain lakes is used, and this ice is stored in an icehouse at the mid-position of the ice dock. Conveyors are reversible and may be used either to load ice into the house or remove it for icing cars. The icehouse, which will hold 16,000 tons of ice, is 300 ft. long, 100 ft. deep and 40 ft. high. It is divided into three sections and there is a sloping conveyor in the center of each section. There is a daily storage room 12 ft. wide which extends the full length of the icehouse along the front.

For loading cars, sufficient ice in cakes of about 300 lb. is moved from the house to the daily storage room. Two conveyors move the ice to the center of the storage room where it is deflected from the conveyor and moves by gravity down an incline to one of two pit conveyors which move the ice under a loading track and up to the ice dock. On the ice dock, the cakes are moved northward by one conveyor or southward by another to either of the two icing machines.

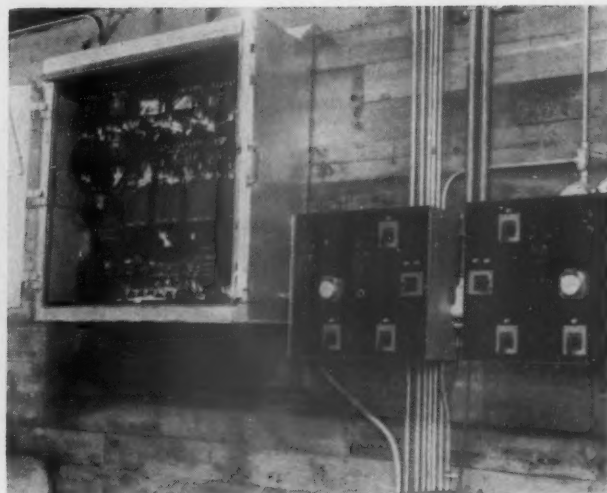
Can Crush Ice to Any Size

The ice dock and one track for the icing machines are located between two tracks on which the cars to be iced are placed. When the cakes moving along the dock reach the icing machine, they are deflected onto the machine. There are two ice crushers on the machine, one which may be adjusted to produce any size of chunk which may be wanted and the other for making very fine snow ice.

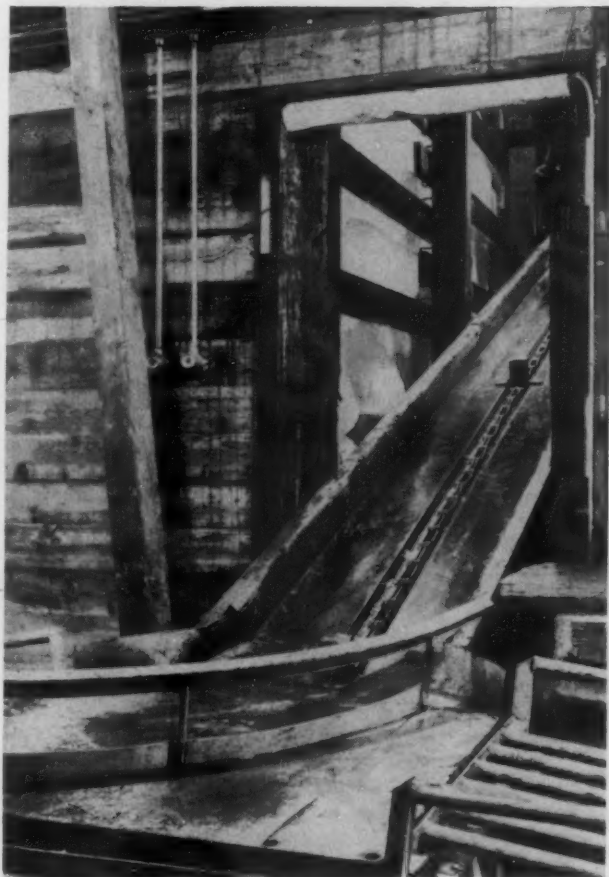
The cakes may be directed into either crusher.



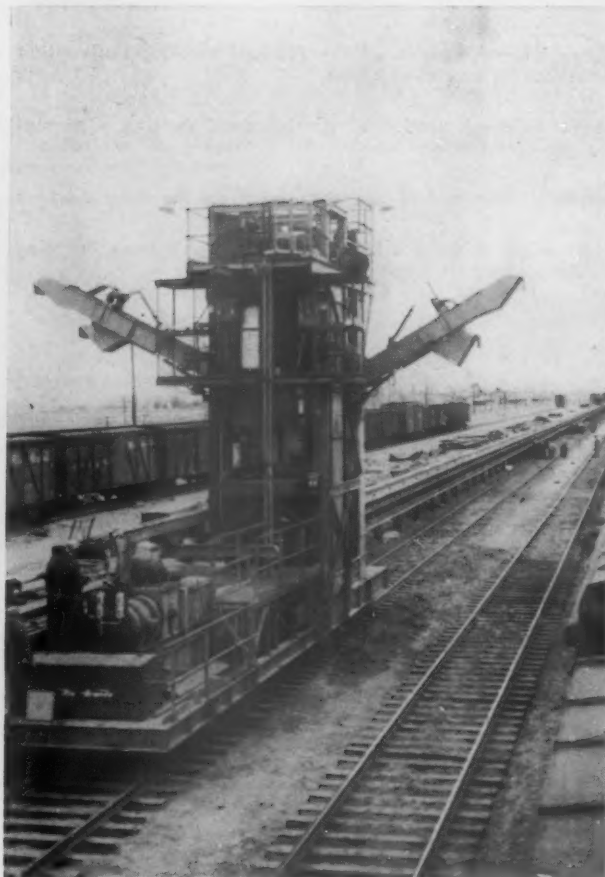
Crusher and blower unit for snow-ice



Coded control equipment in the daily storage room for controlling conveyors from the icing machine



Lower end of one of the three sloping conveyors used to move ice in and out of the icehouse

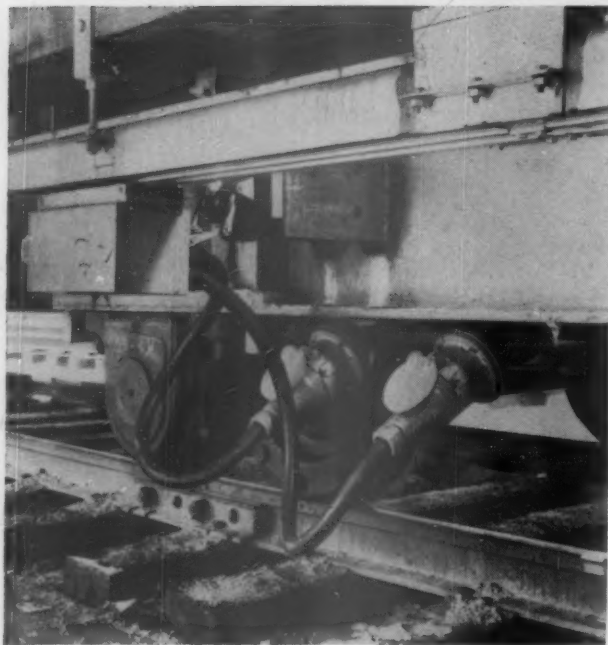


One of the two icing machines

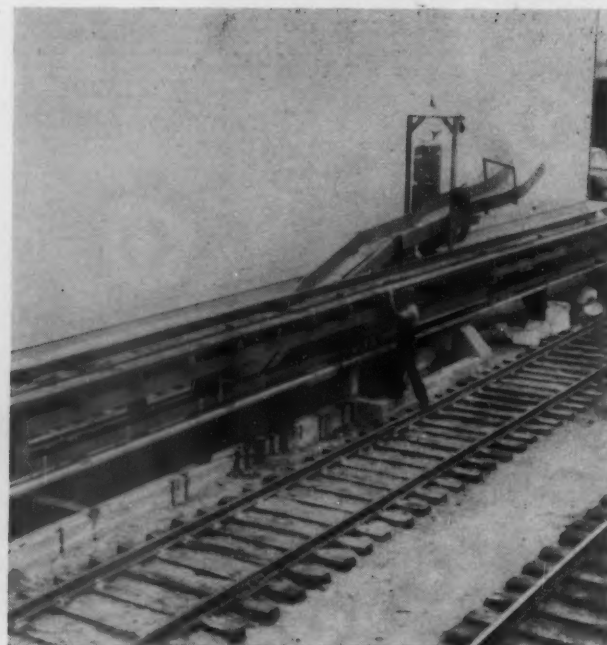
From the first crusher, the ice is elevated to either one of the two adjustable chutes which deliver the ice to the car bunkers. One of the chutes delivers ice on the track adjacent to the icing machine track, while the other reaches across the ice dock to cars on the track beyond. The position of the chutes may be ad-

justed to suit the car being loaded, and the ice may be directed, by means of baffles and gates, to flow out of either of the two openings in the chute.

A selector at the control position of the ice machine is used to weigh out a batch of salt to suit the car's requirements. This salt then flows into each bunker as the



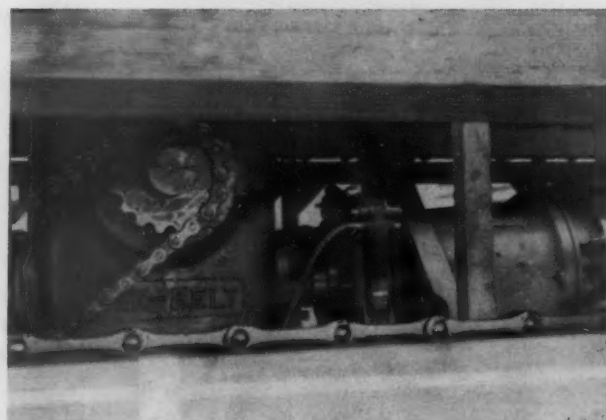
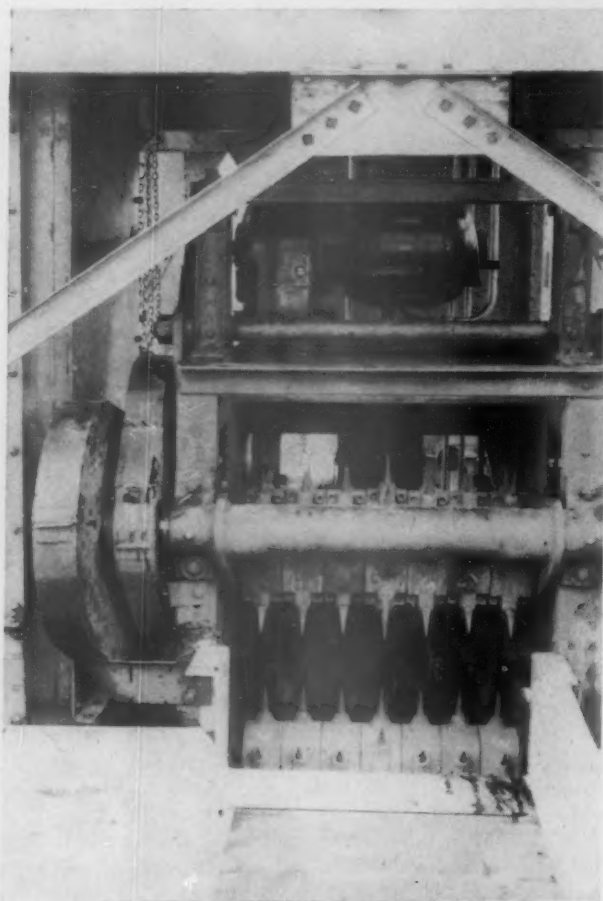
Above left—A section of the Feedrail showing the contact shoe housing and connections



Above right—A section of the ice dock showing a part of the pit conveyor and chute—All conveyors are reversible

Below—Intake end of the ice crusher on the icing machine

Right—One of the two Link-Belt drives which move the icing machine along its track



ice is added. A second crusher on the icing machine produces fine snow ice which is blown through a hose to body ice cars when necessary.

Control and Communication

At the center of the daily storage room are control switches which permit controlling of the house conveyors or passing the control to the operator of the icing machine. With this control so transferred, the icing-machine operator controls the house conveyors, the ice-dock conveyor, the motors which move the icing machine along its track, the crusher motors, the elevator motor and the hydraulic machines which regulate the height of the chutes and the baffles and gates controlling the flow of ice to either side of the machine and to either bunker in a car.

To make all the necessary controls possible, two communication systems and a remote control system for motors are required.

Telephone hand sets and loudspeakers are located on the icing machine, in the icehouse, and in the office building at one end of the icehouse, for telephone

communication between these points. This is a carrier system using 140 kc. superimposed on the 440-volt power circuits.

The control circuits for operating the conveyors from the icing machine control position are carried through the rails by means of General Railway Signal Company coded track circuits. For this purpose the wheels of the icing machines are insulated from the machine and from each other.

A third communicating (public address) system permits the workers on the ice dock to talk with the yardmaster. For this purpose, there are talk-back speakers at 300-ft. intervals along the dock.

Power Supply

Electric power, at 13,000-volts, 3-phase, is delivered to a small transformer station at one end of the ice-house, where it is stepped down to 440 volts for motors and yard lighting, and to 110 volts for interior lighting.

Branch power circuits from the transformer station are protected by air circuit breakers in steel cabinets, mounted on one end of the ice station. Each lighting branch is also protected by a thermal De-ion breaker. Floodlights on towers in the yard are controlled by photoelectric relays.

The several conveyors are driven by two 5-hp., five 15-hp., and four 30-hp. motors. A 7½-hp. motor is used to operate a sump pump under the pit conveyors, for pumping out water and slush that accumulates in

the pit. Operation of the pump is controlled automatically by the level of the water in the sump.

Power for operating the motors on the icing machine is delivered to the machine by a Feedrail Corporation electrical distribution system with an underrunning trolley. This includes three 440-volt conductors in a housing which covers top, sides and a part of the under surface of the conductors. The trolley or shoes operate through a slot in the lower surface of the duct.

The icing machine is a development of the Railways Ice Company, and manufactured by the Link Belt Company. Two 20-hp. motors are used to move the machine along its track. A 10-hp. motor drives the coarse ice crusher, and a 15-hp. motor operates the fine crusher. The fine crusher is adjusted for required size of ice by a 5-hp. motor. There is a 10-hp. motor for the ice elevator. A 25-hp. motor operates the snow ice grinder and a 1-hp. motor drives the feed table to the grinder. A 60-hp. motor drives the blower or impeller which delivers snow ice through a five-inch hose for top icing. A 3-hp. motor moves ice from the dock deflector to the crushers and there are two additional 5-hp. motors, one for the salt elevator, and one for the oil pressure pump. Each of the two icing machines is thus served by motors having a total of 179 hp. In addition, each machine uses 7½ kw. for communication, lighting and coded control. The installation was engineered by, and installed under the supervision of, G. M. Moore, electrical engineer, and J. J. Schmidt, assistant electrical engineer, of the railroad.

New Books . . .

NARROW GAUGE RAILWAYS IN AMERICA, by Howard Fleming, edited by Grahame Hardy and Paul Darrell. 144 pages; illustrations; decorations by E. S. Hammack; foreword by Lucius Beebe. Includes a list of narrow gauge railways in America, 1871 to 1949, compiled by Brian Thompson. 8½ in. by 5½ in. Bound in cloth. Published by Grahame Hardy, 2046 E. 14th st., Oakland 6, Cal. Regular edition, \$5.

OIL LAMPS AND IRON PONIES (A Chronicle of the Narrow Gauges), by Frederic Shaw, Clement Fisher, Jr., and George H. Harlan. 187 pages; illustrations; maps and profiles; drawings of narrow-gauge rolling stock; decorations by E. S. Hammack; foreword by Lucius Beebe. 10 in. by 6½ in. Bound in cloth. Published by Bay Books, Ltd., 742 Market St., San Francisco 2, Cal. All sales and distribution inquiries should be addressed to Frederic Shaw, 4 Third st., Sausalito, Cal. Regular edition, \$5.

To one who, like this reviewer, has always been intrigued by slim-gauge railroads, whether in the canyons of Colorado or the cranberry bogs of Massachusetts, both of these books are fascinating reading.

"Narrow Gauge Railways in America" is a reprint, with numerous additions, of Mr. Fleming's dissertation on the merits of narrow-gauge lines, originally published in New York in 1875, and reissued in the following year. As the title page to the 1876 edition, which is reproduced in the present book, says, it is a sketch of the "rise, progress and success" (from the standpoint of 75 years ago) of narrow-gauge lines then in existence or construction, with "valuable statistics as to grades, curves, weight of rail, locomotives, cars, etc." and a "directory of narrow gauge railways in North America." Statistics and directory alike, of

course, have lost their value except to the antiquarian, the railroad historian or the narrow-gauge "fan." But they provide, nevertheless, an interesting vignette of an almost forgotten bit of American history; and a nostalgic reminder of those less sophisticated—and less nerve-wracking—days when the arrival in a community of a pair of rickety narrow-gauge rails was often hailed with greater enthusiasm than is now accorded to the construction of a four-lane highway.

"Oil Lamps and Iron Ponies," narrower in geographical scope but more complete in detail, is a specific and apparently definitive history of eight western narrow gauges—the Nevada County, the Lake Tahoe Railway & Navigation, the North Pacific Coast, the Sumpter Valley, the South Pacific Coast, the Ilwaco Railway & Navigation, the Pacific Coast (California), and the Pajaro Valley Consolidated. It is a pleasing mixture of historical fact and amusing anecdote, accompanied by excellent illustrations and detailed drawings of equipment which should delight fans and model builders alike. Particular praise should go to Mr. Shaw for his excellent maps and profiles of each of the eight lines, which make the text both more interesting and more understandable, and which set a style and standard that might well be followed in all railroad histories.

It is perhaps gratuitously unkind to mention the fact that both books are somewhat marred by slipshod editing and proofreading, because the resultant minor errors do not seriously distract from the pleasure of reading them. But as a native of Massachusetts, the reviewer is struck by the fact that Mr. Thompson's compilation of narrow-gauge railways in the former book lists one operated by the Delta Cypress Company in Bolivar county in the old Bay State. Somehow cypress—and Bolivar counties—seem a little out of place in the land of the bean and the codfish, so it appears that the proofreader must have been thinking at the moment of other things—even, be it confessed, as *Railway Age's* does on unhappy occasion.



Part of the group of Southern Pacific personnel who honored Dr. J. R. Gancy, chief surgeon of Southern Pacific Hospital, Houston, on his birthday recently

Southern Pacific Officers at Houston Find Luncheon Club Beneficial

Nearly two years ago a group of Southern Pacific officers and department heads at Houston, Tex., were enjoying a brief respite from a series of debates in which they had engaged as a part of their public speaking training.

All agreed there was need for a better and more friendly understanding between all personnel but the majority were not in accord as to the best method of bringing it about.



General Manager T. M. Spence cuts his birthday cake. Left to right: J. J. Moore, assistant general manager, Mr. Spence, T. B. Ollis, superintendent of transportation, and George Wessels of the general manager's office, Houston

"The main thing," one of the embryo speakers pointed out, "is that officers believe those who work under their supervision should know one another well, whereas we, as department heads, are not too closely acquainted with each other." He then went on to observe that railroad officers are so absorbed with their duties that they often arrive at their offices preoccupied with their affairs. Over the years they have failed to take time to become better acquainted with the men with whom they work.

Then one of the members of the public speaking group suggested the organization of a luncheon club at Houston for officers, department heads and supervisors. Before the evening was over a committee had been appointed to investigate the feasibility of forming such an organization. This committee not only declared the plan a good one but recommended that immediate steps be taken.

Within a few week Houston's Southern Pacific Luncheon Club was a functioning reality. Luncheons were held each work day, Monday through Friday, each member paying as he went, plus a small stipend for his membership.

Meetings were soon transferred to the Rice Hotel where facilities were larger. Today, the club has a membership of 175 railroad officers, department heads, supervisors and others.

Southern Pacific Luncheon Club's roster runs the gamut of classifications on the railroad. In addition to the executives there are foremen, chief clerks, bureau heads and men from the regular ranks. Hundreds of other employees have attended the luncheon at one time or another as guests of their superior officers.

Their interest, while mainly Southern Pacific, is to get better acquainted with one another. It is reasonable to say that not one member of the club has failed to profit from the daily get-togethers. Members have come

to understand that they, as top men on the railroad, have many things in common.

When a member has a birthday there is always a large cake to share with fellow members. No one ever leaves the luncheon room on such an occasion without congratulating the member who has celebrated such an important occasion in life. Where does the money with which to buy the cakes come from? It comes from the ever-present "kitty," a small box kept under lock and key and always in a conspicuous place in the luncheon room. Into the box club members drop their small change from time to time, thereby building up a fund with which to see that these cakes are on hand when needed.

Often there are special events such as when Dr. J. R. Gandy, chief surgeon of Southern Pacific Hospital at Houston, celebrated his birthday recently. There was not only a special menu but a lot of fun for everyone. Dr. Gandy, unaware of what had been planned for him, had to enjoy his meal garbed in a surgeon's robe and using surgeon's tools for tableware.

There is always some good natured "ribbing" at these luncheons, some friendly banter to keep these noon get-togethers lively. Guests, if they are well known to those present, come in for this the same as the members. The men who comprise the organization have come to know those with whom they associate each noon hour, and they make the best of the opportunity to cement their acquaintance and friendship.

Though some of the club members have been working on the railroad for 30 or more years, not until these daily luncheon meetings started did they know more than a figurative handful of the officers and department heads beyond the most casual contact on the job.

One member, now an officer, who started his career as a clerk some 30 years ago, met another officer during one of the first luncheons. "You know," he said, "I'm rather ashamed to make this man's acquaintance so late but since making it I have found him entirely different from what I imagined." His experience was typical of many instances since this organization was founded. Such are the benefits to be derived not only in the field of human relationships, but in better operation of the railroad.

Communications . . .

Are the Railroads Walking Into Trouble?

TO THE EDITOR:

It is interesting indeed to read your comments in your issue of August 22 on the general displacement which is underway of steam locomotives by Diesel power. All of the leading railroads are now indulging in this program and much of it is, without question, generally justified. The inherent high thermal efficiency of the Diesel engine as compared with the steam locomotive of standard arrangement has impressed railroad managements in spite of the relatively higher cost of a British thermal unit in Diesel oil as compared with bituminous coal in most parts of this country.

The solution of some of the problems connected with Diesel equipment still lies ahead of the railroads and the locomotive designers and builders. The Diesel locomotive is still relatively new, and important improvements in design and operation will undoubtedly be forthcoming. One does not have to observe a busy railroad operated by Diesel locomotives without being impressed by the smoky Diesel

exhaust which is often nearly as dense as the smoke from the Diesel's older steam brother. This sooty exhaust should worry railroad people more than it does, because it represents not only wasted fuel and lubricating oil but is going to be severely criticized by the neighbors as time goes on. It is by way of being a more troublesome nuisance than coal smoke because it is so sticky. It also makes frequent car washing far more necessary than it has been. An immediate solution is higher maintenance standards, which mean increased expenses.

A cursory observation of the tracks of a busy Diesel-operated railroad also forces the conclusion that there is a great deal of lubricating oil spread over the ground by passing locomotives. This waste should be given far more attention than is now the case.

Much has been said and written pro and con about the future of the petroleum supply in this hemisphere. We have been lulled into some complacency by the optimists who have decided that there is no immediate danger of shortage, even though it may be necessary to resort to synthetic oil, which will be expensive. This optimism has influenced many railroads to embark on a program of complete elimination of all steam equipment from the property and the scrapping of coal-handling facilities and water supplies, a program of course representing immediate economy.

It is apparently the feeling that there will never be a dearth of oil as has been the case with coal, at times when Diesel locomotives have carried the burden of traffic successfully, as during Mr. Lewis' stoppages of activities in the coal fields. It apparently has not been kept in mind sufficiently vividly that serious problems were introduced during World War II along the Atlantic seaboard and in the northeast, when our coasts were blockaded by German submarines. It is, unfortunately, not outside the range of possibility that history will repeat itself if we become involved in World War III and the Soviet "schnorkels" come over to our side of the Atlantic. Petroleum products are in increasing demand for military, aviation and naval needs and the railroads may be seriously embarrassed if they do not have some coal-burning equipment to fall back upon if the emergency should arise.

Diesel locomotives, or perhaps better still, gas turbines may well be the ultimate railroad motive power, but there are still some unsolved problems ahead. It would seem to be too early to follow the current fashion and yield to the temptation to burn our bridges behind us by making a complete change to Diesel equipment and entirely scrapping the old form of motive power, in spite of the obvious immediate advantages in so doing.

It seems appropriate to suggest presenting some thoughts in this connection with the idea of stimulating discussion at this time.

I. M. PERTINAX

A Thought for the Brotherhoods

420 MADISON AVENUE,
NEW YORK 17

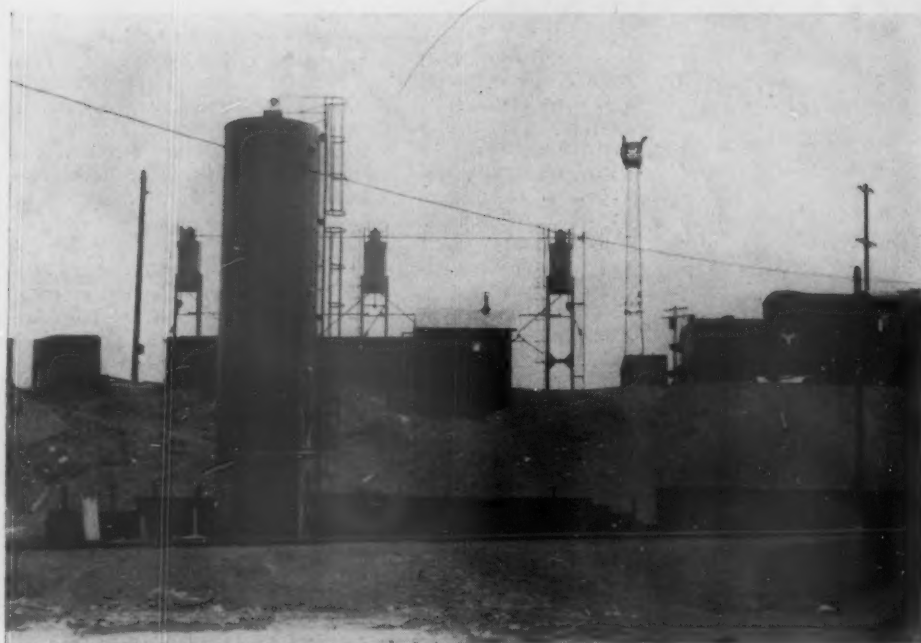
TO THE EDITOR:

Those members of the railway brotherhoods who have been urging the public ownership of railroads would do well to read the proceedings of the hearing held in Springfield, Mass., on July 25, on the question of federal hydro-electric development of New England waterways.

They would learn that both the C.I.O. and the A.F. of L. opposed the discriminatory method of distribution of the power or energy developed from flood control in favor of publicly owned plants because "labor unions have suffered not only in wages but in other collective bargaining where public ownership has displaced private utilities."

This is an angle that the brotherhoods might investigate before advocating government ownership of the railroads or making any moves that would tend to drive the railroad owners out of business in their battle to meet competition subsidized by the government.

M. HIRSCHTHAL
Retired Concrete Engineer,
Delaware, Lackawanna & Western

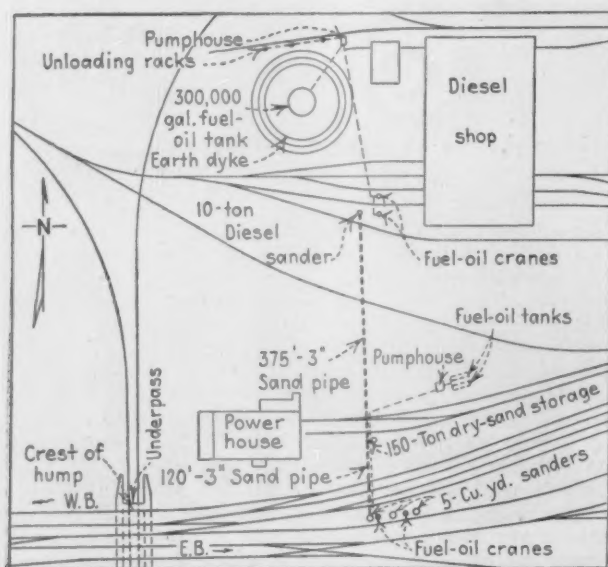


Commercial predried sand is unloaded from cars into an unloading hopper of the 150-ton dry sand storage tank shown in the foreground. The sand then flows into a sand-lift drum and is blown to the top of the tank. Electrically operated "bin-dicators" at the quarter points indicate the height of the sand within the tank

Sand Plant Supplies Two Servicing Layouts

From a 150-ton main storage tank at Clearing yard, Chicago, sand is blown 120 ft. in one direction for hump Diesels and 375 ft. in another to service other locomotives

In connection with the conversion of its steam locomotive shop at Clearing yard, Chicago, into a shop for handling the heavy repair and running maintenance of its



Sand is blown from the 150-ton storage tank in two directions, namely 375 ft. north to a sand tower near the Diesel shop, and 120 ft. south to three sand towers on the hump

Diesel-electric power, the Belt Railway of Chicago recently erected separate sanding and fueling facilities for servicing the Diesels assigned to hump operations and those assigned to other service. The outstanding feature of this installation is the fact that sand is blown 375 ft. in one direction from a dry-sand storage tank to fill the elevated hopper of the sanding facilities near the Diesel shop, and 120 ft. in another direction to fill the hoppers of three sand towers near the crest of the yard hump.

The sanding and fueling facilities were built in anticipation of the complete Dieselization of the railroad this fall. Since the Belt's fleet of Diesels includes some types that require sanding from the sides and others from overhead, and are operated as either single or double units, the sanding and fueling facilities on the hump were designed to service any of these types and combinations at one spotting, while those near the Diesel shop will service any single unit at one spotting.

Storage Tank Holds 150 Tons

The main sand-storage tank was erected near the toe of slope of the hump embankment and is served by a track used by cars in the disposal of cinders from the powerhouse. It is a cylindrical tank, 10 ft. 6 in. in diameter by 30 ft. high, and is supported on four legs at an overall height of 44 ft. above the top of rail. The tank has a capacity of 150 tons of dry sand. Commercial dry sand is used, which is received in box cars. The tank has a cone bottom and the space beneath is enclosed to house

the blowing equipment which utilizes compressed air from the terminal air supply at a pressure of 100 lb. per sq. in.

A hinged ramp has been provided on the track side of the lower enclosure of the tank to permit the use of wheeled scoops for transferring sand from a box car to an unloading hopper. The sand flows from this hopper into a 1-ton sand-lift drum and is blown through a 3-in. pipe riser to a baffle box, located at the top of the tank, whence the sand falls into the tank. An inside ladder, a manhole in the roof of the tank, and an outside ladder with a safety cage, provide means for maintenance men to enter the tank.

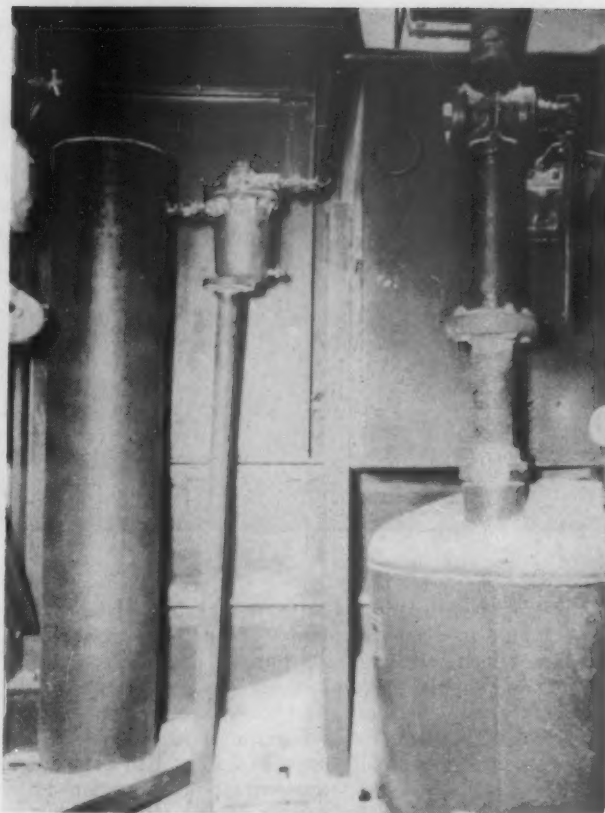
The height of the sand within the tank is shown by electrically operated "bin-dicators" placed at the quarter points inside of the tank, and by color lights on a wall panel of the enclosure. A red light indicates the sand level to be at the low quarter-point or above; a yellow light that it is at the mid-point or above; and a blue light that the tank is full. Another light on the panel (white) shows that the electrical power is on and that, if none of the other lights is illuminated, the sand is below the low quarter-point.

Because of the affinity of sand for water, and to keep as much moisture out of the sand and the pipe lines as possible, a condensation tank and a water trap were installed between the sand-lift drum and the terminal compressed-air supply. Both of these moisture collectors are drained daily.

Sands Top or Side Ports

The sanding facility near the Diesel shop consists of a single tank, of 10 cu. yd. capacity, supported on four posts at an overall height of 52 ft. This sand tower can serve Diesel units spotted on either of two tracks. The sand spouts for those locomotives with overhead loading ports are suspended from vertical drop pipes. These spouts, one on each side of the tank, have a pulley and counterweight for holding them at a suitable overhead clearance when not in use.

There are two pairs of sand spouts on this tower for sanding locomotives having side-loading ports. Each of these pairs of spouts is so mounted with a pivoted arrangement that it can be swung into position over either

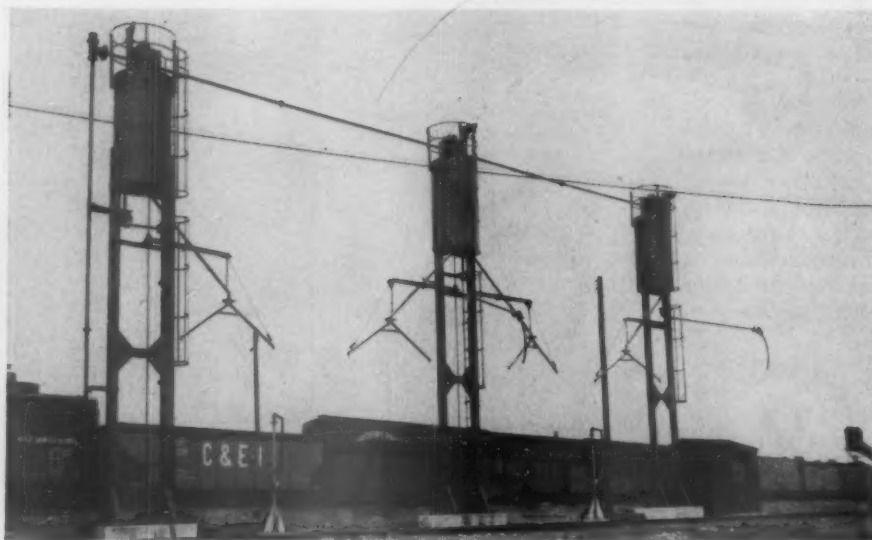


A condensation-removal tank and a moisture trap (left) were installed to collect any moisture that may get into the sand. The sand-lift drum is shown at the lower right

track to fill both sand ports at one end of a single-unit Diesel simultaneously. The two pairs of spouts are spaced 31 ft. apart to permit all side ports of a Diesel to be filled at one spotting. Each of these pairs of spouts is rotated horizontally by means of a hand crank located near ground level. When not in use, the spouts are moved to a neutral position between tracks. The delivery ends



This 10-ton sand tower can serve Diesel units having either overhead or side-loading ports on either of two tracks. The locomotives may also be fueled at this point



The erection of three small sand towers on the hump keeps down their overall height and lowers the overturning factor. Their location on the hump, together with the fueling cranes, permits 24-hr. operation of the two-unit Diesels

of all spouts are equipped with W-M sand valves which are actuated to discharge sand when pressed against the screens of locomotive loading ports.

The sand supply line connecting the tank of this sanding facility with the main sand storage tank consists of a 3-in. pipe. This line has a horizontal length of 375 ft. and a vertical rise at the tower of 54 ft. The horizontal portion was buried underground to pass under four tracks.

It also had to cross a concrete tunnel which carries compressed-air, high- and low-pressure steam, water, and electric power lines. The depth of the tunnel made it impracticable to place the sand pipe line under it, so a shallow trench was cut out of the concrete roof of the tunnel and the sand line was carried over it in a short length of heavy-duty hose. The hose is disconnected at monthly intervals and turned 90 deg. to equalize the inside wear. A signal light on top of the tank near the Diesel shop informs a station operator working in the enclosure of the main storage tank when refilling is required.

Because blown sand has a tendency to compact and move through a pipe in masses instead of by particles, two lump break-up devices, called line boosters, were installed in the long horizontal length of the sand-supply line to the sanding station at the Diesel shop, and another one at the base of the vertical pipe at the tower. All changes in direction of the supply line were made by pipe fittings which produce sand pockets. With this arrangement, the blown sand is turned in direction on other sand particles, thus eliminating any sand-blasting effect on the fittings.

Permits 24-Hour Diesel Operation

The sanding and fueling facilities constructed on the hump serve a track located between the leads of the east-bound hump yard and the approach tracks to the west-bound hump yard. The Diesel locomotives to be used in these two hump-retarder yards can thereby be kept in 24-hr. operation without having to leave the hump to replenish sand and fuel supplies.

The sanding facility at this location consists of three 5-cu. yd. tanks, each mounted on a two-post tower. Three tanks were erected, instead of a single tank of larger capacity, to keep down the overall height and to reduce the overturning design factor which would be high for a single tank and tower. The overall height of each of the

three tanks is about 36 ft. above the top of rail of the track served, which means a lift of about 55 ft. from the sand-lift drum at the storage tank.

The sand supply line for these three tanks is about 120 ft. long and is laid underground, following the general slope of the hump embankment and passing under four tracks to the westerly sand tower. Here, the line rises to a baffle box on top of the westerly tank, continuing to baffle boxes on top of the other two tanks. When sand is blown from the sand storage tank, it flows into the westerly tank until it is filled, then flows to the middle tank until refusal, and on to the third tank. When the easterly tank has been filled, that fact is made apparent to a station operator working in the lower enclosure of the main storage tank by a signal light on a nearby pole.

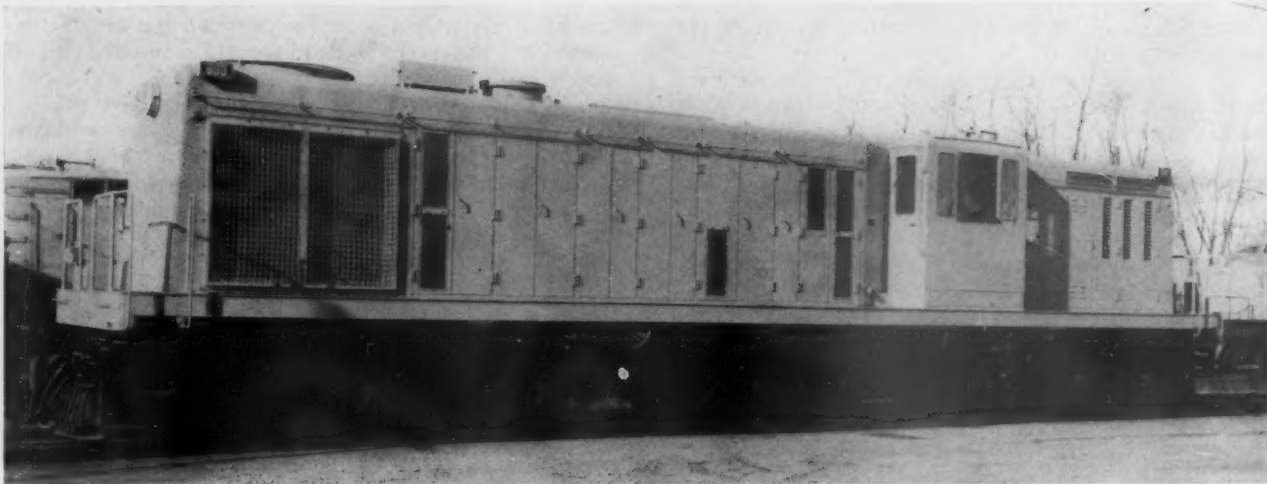
The easterly and westerly tanks each have a single spout for locomotives requiring overhead filling and two spouts, suspended 9 ft. apart, for locomotives requiring side filling. The middle tower has two spouts for overhead filling, and two pairs of spouts for side filling. Hence, all ports of two-unit Diesel locomotives, as well as single-unit locomotives, can be filled at one spotting.

Fueling Facilities Provided

Fueling facilities were installed at each sanding location. Those near the Diesel shop include a 300,000-gal. steel tank, which is the main fuel storage tank at this terminal, a pumphouse, two fueling cranes and the necessary piping. The fueling facilities for the locomotives assigned to hump service consist of two 10,000-gal. steel tanks buried underground, a pumphouse, two fueling cranes, and the necessary pipe lines. The cranes of each separate facility are located strategically with respect to the sanding spouts so that both operations can be handled with one locomotive spotting.

At each location, an electric push-button switch is provided to start and stop the pumps by remote control. The delivery ends of the hoses are equipped with hand-squeeze valves for positive control of the flow of fuel oil into the locomotive fuel tanks.

All work in connection with the design and installation of these facilities was done under the general direction of V. R. Walling, chief engineer of the railroad, and A. B. Hillman, assistant chief engineer. The sanding and fueling facilities were designed and constructed by the W-M Corporation, Chicago. D. E. Perrine, assistant engineer, was in direct field charge for the railroad.



Guatemala Now Using 1,200-Hp. Narrow-Gage Diesels

Locomotives with high horsepower rating made possible by odd wheel arrangement and longitudinally mounted motors

By B. S. CAIN and W. R. MITCHELL
Locomotive Engineering Division
General Electric Company

Six new Diesel-electric locomotives constructed by General Electric Company are now in service in Guatemala. They were purchased by United Fruit Company's subsidiary Compania Agricola de Guatemala and the transaction was negotiated by the Maritrop Trading Corporation. These locomotives are operated by the International Railways of Central America on their 36-in. gage line. They are utilized for heavy train movements, particularly banana traffic, over the mountainous section of the railroad.

Four of the new 120-ton locomotives are operated in each train, two in multiple at the head end, and two in the center. They handle 40-car trains from Santa Maria to Palin. From there, the head-end locomotives take the train to Guatemala City. The total distance is 52 miles, but the terrain is very difficult. One 15-mile section has an average grade of 3.11 per cent, an average curve of 5 degrees, and eight hairpin turns. Under the maximum condition of a 3.6 per cent grade, combined with 15-deg. curves, the speed will be reduced to approximately 8 m.p.h. The time taken to make this run is about three hours.

The locomotives develop a continuous tractive force of 37,000 lb. each at 9.5 m.p.h.; their maximum speed



Ball-and-socket articulation used between trucks

is 40 m.p.h.; and the maximum tractive force at 30 per cent adhesion is 72,000 lb.

The locomotive designers decided to use the standard 1,500-hp. American Locomotive-General Electric road switcher Diesel-electric power plant. Above the center plates, the locomotives resemble the standard as much as conditions warrant. The arrangement of trucks, however, is entirely different, due to the limitations imposed by the 36-in. gage. Both axle loads and the maximum rigid wheelbase were restricted. The overall height of the locomotive was severely limited, both by the clearance diagram and the necessity of keeping the center of gravity low. The design adopted consists of eight axles, with a load of 30,000 lb. per axle, arranged in two 3-axle trucks and one 2-axle truck, or C+B+C. The trucks are articulated and carry the couplers and draft gear, so that the considerable tractive force at the rather low height of 26 in. is transmitted entirely through the truck frames. The articulated joints are also used to load up the middle truck, which has no center plate or other lading device. This arrangement has the additional advantages that sharp curves can be negotiated freely and that the distribution of load on the axles is not affected by curvatures.

The 36-in. gage traction motor selected for this application has a rated output of approximately 125 hp. Based on 150 hp. of engine output per motor, the eight motors require 1,200-hp. input to the generator for traction.

Arrangement of Trucks

Each of the two 3-axle trucks is equipped with a draft gear and coupler at the outer end and an articulation ball joint at the inner end. This ball serves to carry buffing loads and transfer weight to the middle truck. The center (2-axle) truck has a pocket at each end to carry the ball of the end trucks. As there is no center plate on this

truck, all the weight is applied through the articulation assembly. The articulated joints are immersed in oil and sealed against dirt.

The articulated construction of the locomotive running gear assures that all buffing and hauling strain are taken through the truck frames.

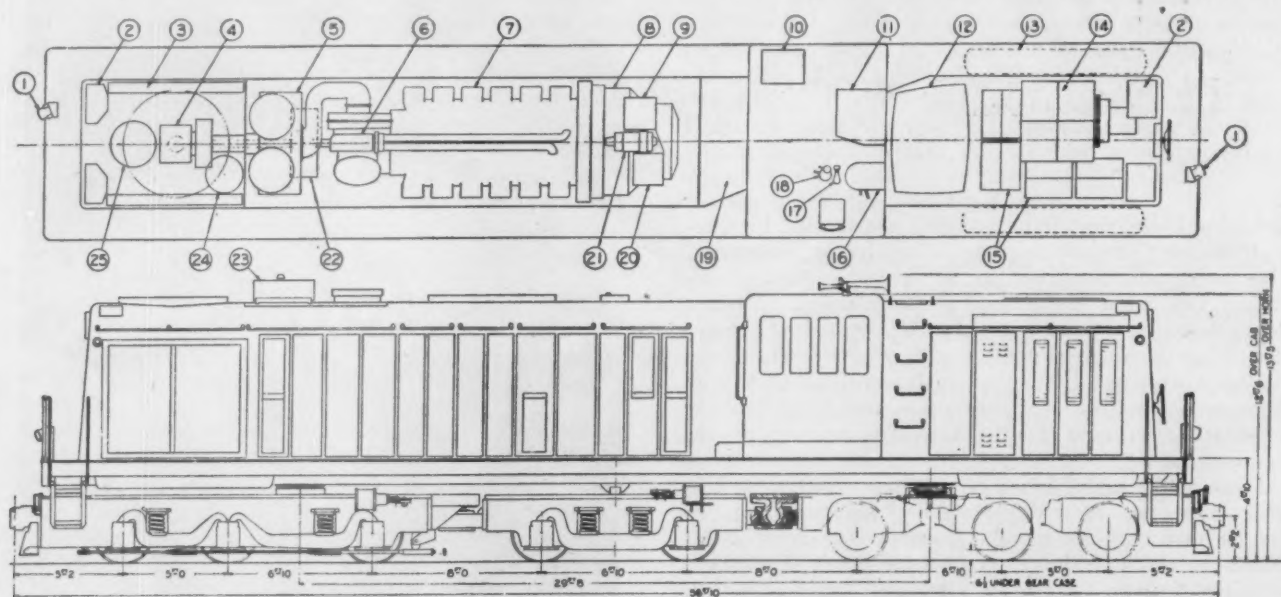
The truck frames are fabricated by welding and the center plates are welded integral with the frames. Safety lugs on each side of each truck prevent separation of the trucks and platform in an emergency. Center plates and pedestals have renewable hard steel liners. The main journals are equipped with roller bearings.

The trucks are individually equalized. The spring rigging consists of carbon-steel coil springs resting on twin drop equalizers. Half of the coil springs on the end trucks are fitted with long-range friction snubbers, but no snubbers are used on the center truck.

Brake cylinders on each side of each truck operate single brake shoes on each wheel through fully equalized brake rigging. The rigging is designed to give a braking power of approximately 60 per cent with 50 lb. per sq. in. brake cylinder pressure. One end truck is fitted with a hand brake to hold the locomotive at standstill.

Superstructure

A welded steel platform supports the equipment which is arranged in three main groups: an auxiliary cab containing the fuel tank, dynamic braking resistor and storage batteries; a single-station engineman's cab with insulated roof and sides; and a long engine cab containing the power plant and accessories. The engineman's cab occupies the full width of the platform, while the other cabs are narrower to allow visibility in both directions and to provide side walkways. Restricted clearances required that the hand rails for these walkways be placed on the cab sides. All the space under the plat-



PLAN AND SIDE ELEVATION SHOWING ARRANGEMENT OF EQUIPMENT

1. Multiple unit coupler
2. Sand boxes
3. Radiator
4. Compressor and radiator fan drive
5. Oil bath air filter
6. Supercharger
7. Diesel engine
8. Main generator

9. Auxiliary generator
10. Tool box
11. Auxiliary control compartment
12. Fuel tank
13. Air reservoir
14. Braking resistors
15. Battery boxes
16. Controller

17. Foot valve
18. Brake valve
19. Control compartment
20. Exciter
21. Motor-generator set
22. Air compressor
23. Expansion tank
24. Oil cooler
25. Oil filter

Oblique articulation-end view
of one of the two three-axle
trucks



Side view of the two-axle
truck



form is taken up by the trucks and the fuel tank and batteries, which are often placed below the platform, have therefore been located in the auxiliary cab.

Special care has been exercised to provide easy access to equipment for maintenance and inspection. There are numerous doors for this purpose in both the auxiliary and engine cabs. The entire auxiliary cab and the section of the engine cab over the power plant are removable. Additional inspection doors are provided in the roof over the engine. The bad dust conditions under which these locomotives are to operate, necessitated that all air for the engine, air compressor and generator cooling be passed through filters in the side doors or in the roof air intake. The engine air also passes through two cylindrical oil-bath filters connected to the supercharger air-inlet duct. The air passes through a perforated cover, then through an oil-bath and then through a metal wire screen.

Equipment

The power plant and its arrangement in the engine cab are nearly identical with that on the standard Alco-G.E. 1,500-hp. road switcher. The engine is a series 244, 950-r.p.m., 12-cylinder, V-type, 9-in. bore by 10½-in. stroke, 4-cycle, supercharged Diesel. It has the usual radiator and engine accessories. Because the temperature never goes below 50 deg. F. there is no freezing problem and the usual radiator shutters have been replaced by a heavy wire screen. A scavenging fuel pump and sump have also been provided to return excess fuel to the fuel tank, which is located above the platform.

General Electric equipment in the power plant includes the main generator, the amplidyne exciter, the auxiliary generator, a 60-in. fan for radiator cooling, the eddy-current clutch and right-angle gear unit for fan drive and the power plant regulator.

The locomotive has eight General Electric type GE747 d.c., series-wound, self-ventilated traction motors. Each motor drives through a double-reduction gear with a

ratio of 11.5 to 1. Vibration is kept at a low level by a right-angle hypoid drive in the high-speed reduction. The low-speed reduction is through spur-type, spring-cushioned gearing. Anti-friction bearings are used throughout except in the axle linings which are of the conventional sleeve type.

Operator's Station

The operating station is on the right side of the engine-man's cab, facing the auxiliary cab. Located at this station are the throttle lever, reversing lever, brake valve, sander valve, bell and horn controls, window wiper controls, emergency stop button, air gages, speedometer and load meters, and light switches. Adjacent to the operating station, and visible from it, is the auxiliary control panel. This panel contains the engine start switches, the

GENERAL INFORMATION 1,200-HP. DIESEL-ELECTRIC LOCOMOTIVE

Wheel arrangement	C + B + C
Diesel engine horsepower	1,200

MAJOR DIMENSIONS

Track gage	36 in.
Overall length inside knuckles	56 ft. 10 in.
Height over roof	12 ft. 6 in.
Overall height	13 ft. 5 in.
Width over cab sheets	9 ft.
Overall width	9 ft. 7 in.
Total wheel base	46 ft. 6 in.
Maximum truck wheel base (C-truck)	11 ft. 10 in.
Minimum radius curve	230 ft.

WEIGHT (FULLY LOADED)

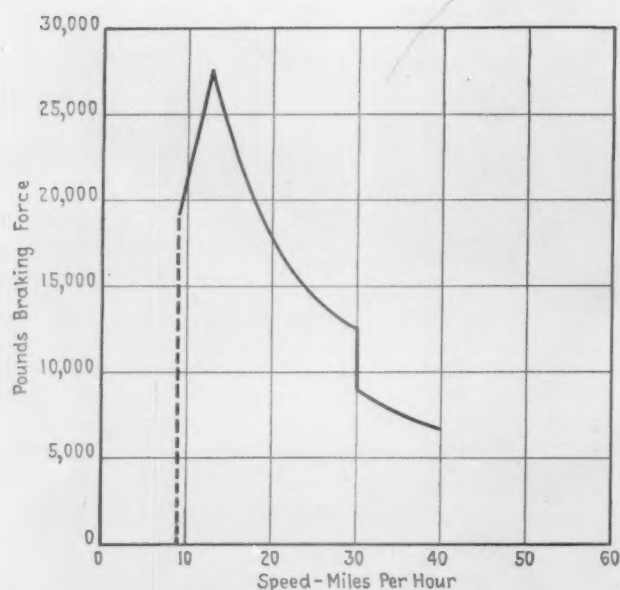
Total locomotive	240,000 lb.
Driving axle	30,000 lb.

TRACTIVE FORCE AND SPEED

Starting tractive force (at 30 per cent)	72,000 lb.
Continuous tractive force	37,600 lb.
Maximum speed	40 m.p.h.

SUPPLIES

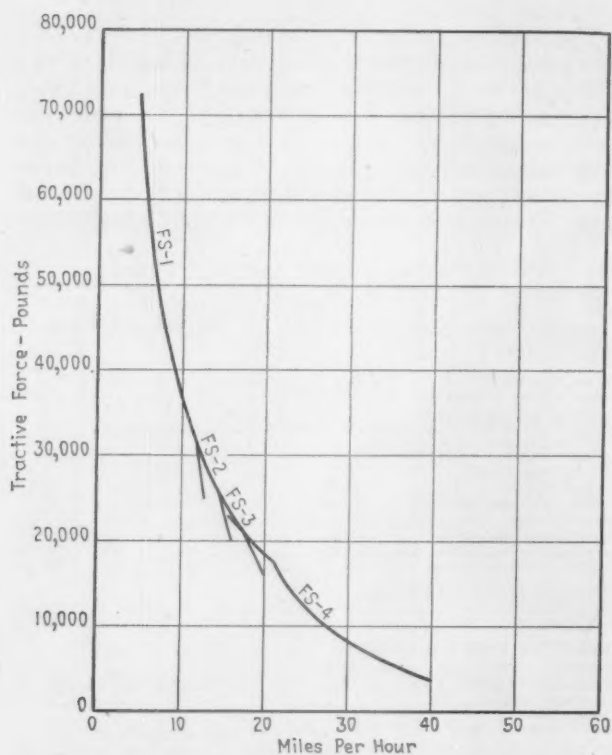
Fuel	800 gal.
Lubricating oil	200 gal.
Engine cooling water	250 gal.
Sand	20 cu. ft.



Braking curves for eight G.E. 747 motors with 33-in. wheels and 40 m.p.h. gearing

main control breakers, and gages for lubricating oil, fuel oil, booster air, and water temperature. This arrangement makes the locomotive controls completely independent of the power plant controls, thus avoiding any confusion.

The main and auxiliary control compartments are accessible from the operator's cab. Most of the equipment is located in the main control compartment, but the au-



Speed-tractive force curve for the locomotive based on 1,200-hp. input to the generator for traction—The gear ratio is 11.5:1 and the wheel diameter 33 in.

tomatic field shunting relays and air brake equipment are in the auxiliary compartment.

The locomotive is equipped with single-station, multiple-unit control which permits two locomotives to be coupled in multiple at either end.

A single throttle lever controls locomotive speed by regulating the Diesel engine output. The transition handle has two positions: One is for speeds up to 12 m.p.h.; the other is for all speeds from 0 to 40 m.p.h. The motor fields are automatically shunted at the proper points to give high-speed operation. The motors are permanently connected, two in series, and four pairs in parallel. They may be cut out in pairs by means of a motor cutout switch.

A wheel-slip relay drops the generator current to the first notch current limit, and operates a buzzer when wheel-slip starts. Power is reapplied slowly and the buzzer stops as soon as the wheels stop slipping. A time lag of 2 to 3 seconds in the reapplication of power is used to minimize the possibility of slipping again. Automatic means are provided for idling or stopping the engine in case of low lubricating oil pressure and idling the engine in case of high water temperature.

Dynamic Braking

The general scheme of dynamic braking employs the traction motors as generators. Their fields are separately excited to provide control, and a resistor is used to dissipate the power generated. Excitation of the motors during braking is accomplished by connecting all motor fields in series with the propulsion generator. This machine is designed to supply the low-voltage, high-current excitation required by the traction-motor series fields. Braking is controlled by a rheostat in the main generator excitation system. Switching equipment is required in the main power circuits to make up the excitation circuit of the motors and to connect the traction motor armatures to the braking resistors. Additional switching in the control circuits sets up the main-generator excitation and engine-speed control circuits.

To transfer from motoring to braking the engineman simply moves the controller selector handle to the "Off" position and then moves it into the brake position, being careful not to exceed the rated motor current as indicated on the ammeter.

Cooling air for the grids is taken through grills in the side doors, and discharged through a duct out the right side of the auxiliary cab. Approximately 10,000 cu. ft. per min. of air is handled during maximum braking, with a temperature rise of 120 deg. C.

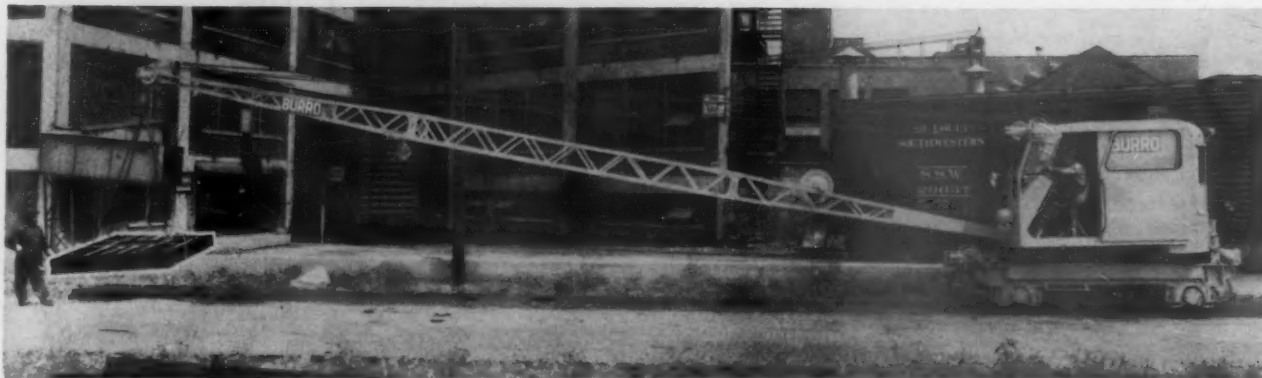
The long, steep mountain grades on which these locomotives will operate are well suited to the use of dynamic braking. The resulting increased speed and safety of downhill train movements is a definite advantage. Decreased time en route between the banana farms and the port will reduce spoilage of the fruit.

Air Brakes and Compressors

The air brake equipment is Westinghouse's combined independent and automatic, Schedule 14-EL, with one Type K-14 engineer's valve, embodying an automatic train brake valve and an independent locomotive brake valve. The compressor is a Type 3CDB, directly driven from the power plant with a displacement of 250 cu. ft. per min. at 950 r.p.m.

The total capacity of the main air reservoirs is approximately 1,040 liters (63,600 cu. in.). The reservoirs are located underneath the platform at the sides, where they are accessible.

New and Improved Products of the Manufacturers



NEW BURRO CRANE FEATURES LONG BOOM

A new Burro crane—the Model 40—has been announced by the Culler-Friedstedt Company, Chicago. The new model has a capacity of 12 tons and can be equipped with a 55-ft. or 60-ft. boom. Hence, it is reported to be particularly applicable for laying 78-ft. rails.

COMPOSITE STEEL AND WOOD CAR FLOORING

A type of freight car flooring has been developed by Armco Steel Corporation, Middletown, Ohio, in which both steel and wood are used to afford greater strength and longer life in box-cars, gondolas and flat cars.

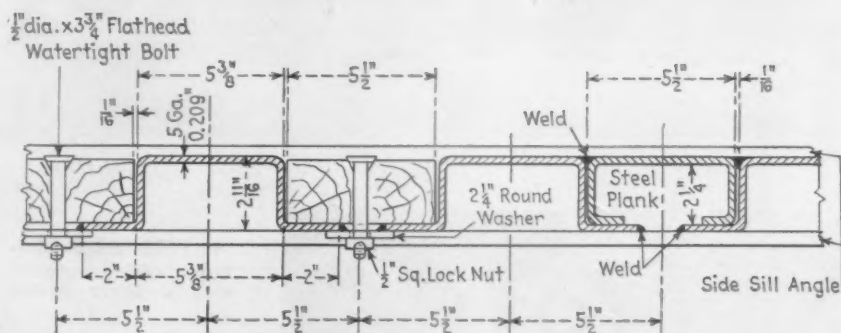
Hat-shaped steel ribs, placed across the width of the car and welded to the center sill, stringers, and side-sill angles, alternate with wood planks bolted to the rib flanges. The top surfaces of the hat sections form part of the floor. Since they extend slightly above the wood planks, they support most of the load and take the wear and tear of rough service. Steel planks, tack-welded to the ribs, are used where it is impossible to bolt wood planking. The manufacturer estimates that the overall cost of the Armco freight-car flooring, including first cost and replacement, will be approximately 45 to 50 per cent less than conventional wood flooring.

The combination wood and steel floor has the advantages of both steel and wood flooring. Bulk lading can be mechanically unloaded without damaging the flooring; packaged lading rests on the steel ribs, while bracing can be nailed to the wood planks.

Especially important is the greater strength of the new flooring compared with either steel plate or wood plank.



The Armco composite steel and wood floor



Cross section of a typical Armco floor for a gondola car. Wood planks are bolted to the rib flanges. Formed steel planks are used over bolsters or cross bearers if it is impossible to secure wood planks by bolting.

It will not sag under concentrated loads as do steel plates and, unlike wood flooring, will not break under the heavy loads imposed by lift trucks and palletized lading. Modern mechanical loading systems may exert wheel loads up to 10,000 lb. This exceeds the limits

of wood flooring and break-throughs are frequent.

Comparison of the load-carrying capacity of a single steel rib with a wooden plank shows the decided advantage of the new design. Replacing a 1 3/4-in. by 5 1/2-in. box-car floor plank,

a steel rib of 0.135-in. hot rolled steel has a design strength $3\frac{1}{2}$ times that of the plank. Ribs 0.209 in. thick, recommended for gondola car floors, are $4\frac{1}{2}$ times the design strength of the $2\frac{3}{8}$ -in. by $5\frac{1}{2}$ -in. wood plank normally used. These data, of course, apply directly only to concentrated loads, the most critical in freight-car service. When a concentrated load is placed on a wood plank component, it is transferred to the steel ribs by the supporting rib flanges. Since the steel ribs extend above the alternate wood planks, the steel surface takes most of the wear. Consequently, abrasion and splintering of the wood by lift trucks, unloading devices and lading is reduced.

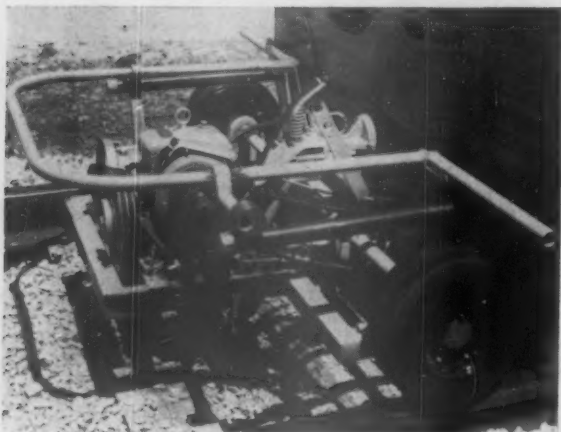
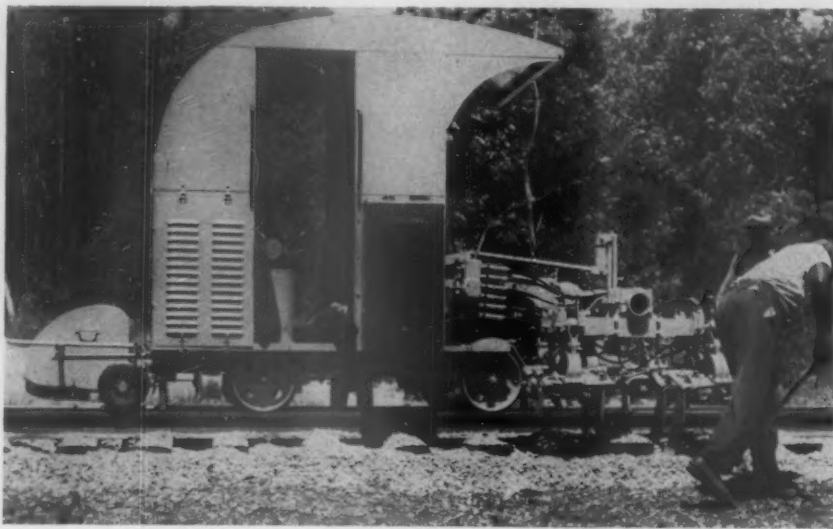
POWER PUSHER FOR MULTIPLE TAMPER

A power pusher for the Jackson Multiple Tamper, which relieves the operator of this tamping machine of all manual effort in moving the unit from tie to tie during tamping operation, has been developed by the Electric Tamper & Equipment Co., Luding-

ton, Mich. The device is reported to be particularly useful when working on steep grades, around sharp curves or in the face of strong head winds.

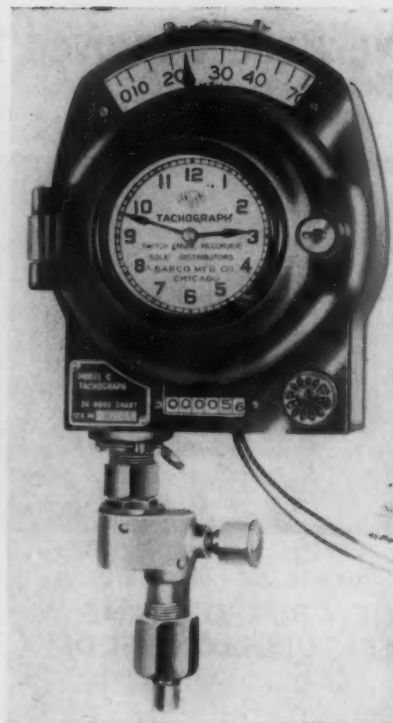
The pusher consists essentially of two retractable, rubber-tired, dual wheels with an axle between them, chain-driven by an electric motor which receives its power from the Multiple Tamper generator. The pusher assembly is coupled closely behind the tamping machine and is controlled by the operator through a hand lever located close to the control valve which raises and lowers the tamping blades. When the operator moves this lever the two wheels of the pusher drop down to engage the rails and thus provide pushing effort. An operator can learn quickly how long to keep the wheels down in moving from tie to tie.

The device can be quickly disengaged from the tamping machine and lifted from the track by three or four men. It can be reattached as quickly. If it is necessary for any reason to use the manually operated hand wheel for moving from tie to tie, the power pusher in no way interferes with it. The device may be applied to any Multiple Tamper now in the field as well as to the latest model.



The 1950 Jackson Multiple Tamper equipped with a power pusher

The power pusher assembly



RECORDER FOR LOCOMOTIVES

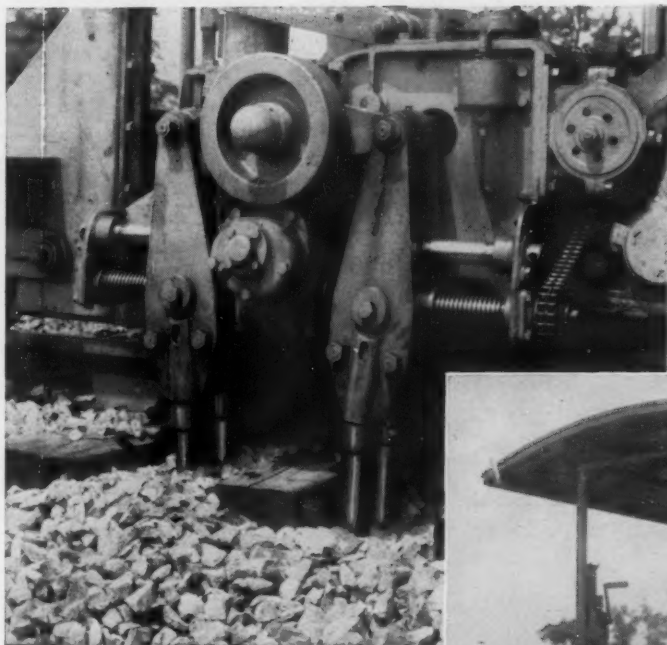
A switch-engine recorder distributed by the Barco Manufacturing Company, Chicago 40, has a chart which serves as a permanent graphic record, an illuminated speedometer, a clock, and a mileage indicator, all visible to the engine-man and automatically operated. It records four things — locomotive speed in miles per hour, distance traveled, time the locomotive is in motion and time the locomotive is idle. The recorder is adaptable to all types of switching locomotives, both steam and Diesel, and can readily be applied to any locomotive without major alterations.

The hinged door of the recorder contains a hand-wound clock with a 30-hour movement specially designed to withstand engine vibration. This door, when unlocked, gives access to the chart and permits winding and setting the clock. The mileage indicator reading is entered on the chart at the start of the trip. The chart is then slipped under the time pointer and clamped with the chart spring. Opening and closing the door cuts the edge of the chart, marking the beginning and end of the trip.

The chart, made of red paper, is coated with a white opaque wax and imprinted with appropriate lines. Both the dial and chart are calibrated from 0 to 70 m.p.h.

The driving mechanism is available in both friction-drive and axle-drive models. The friction drive is recommended where it can be applied without interference. It consists of a drive wheel mounted in a casting connected to a plate by a hinged arm.

These **MATISA** machines



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A self-propelled unit requiring only one man to operate, the MATISA Automatic Tie Tamper works at the rate of 350 to 600 ft. of track per hour.

The machine mounts two complete tamping mechanisms, one over each rail, each separately controlled. Each tamping unit comprises eight tamping tools, four inside and four outside the rail. The opposed pairs are positioned on each side of a tie, vibrating rapidly while being forced toward each other, until the desired compactness of ballast under each tie is obtained.

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at
LOWER COST



**MATISA
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This self-propelled on-track machine cleans up to 400 lineal feet of track per work hour. An endless scraper chain is run beneath the track structure, elevating the ballast to a series of conveyors and screens where it is cleaned and returned to the roadbed, while the waste dirt is ejected clear of the tracks.



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And remember, one piston fits *all* General Motors 567 Diesel engines—6, 8, 12 or 16 cylinders—in freight, passenger or switching service.

Lower parts inventory and lower cost parts are further reasons why more and more railroads are adding to their fleets of General Motors locomotives.



ELECTRO-MOTIVE DIVISION

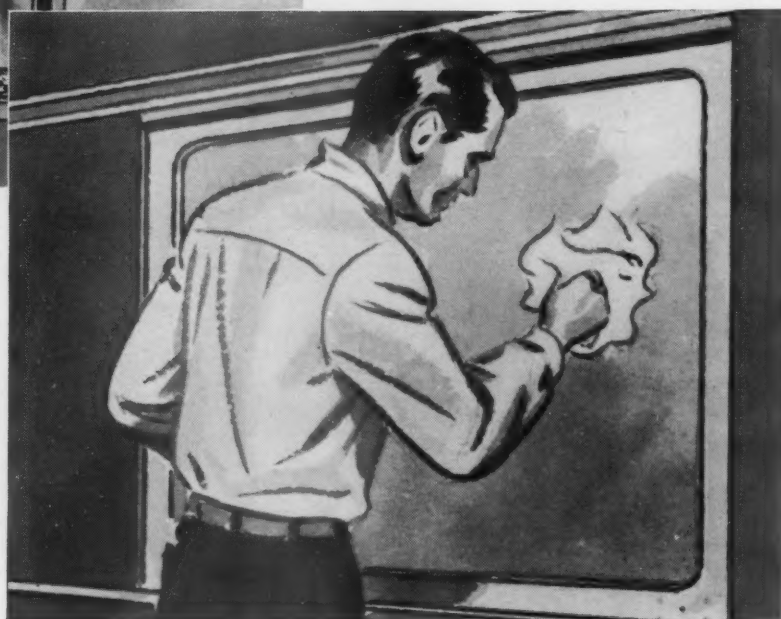
General Motors, La Grange, Illinois

Home of the Diesel Locomotive



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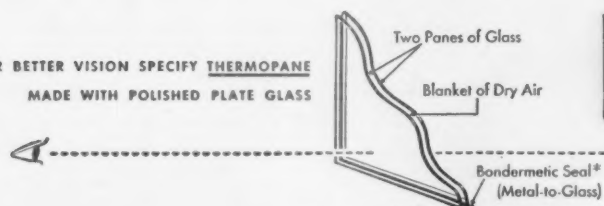
We don't know what *your* passenger car maintenance costs are—but we do know *Thermopane** insulating glass saves money compared to the cost of keeping an old style double window clean. Your own accurate records of the comparative cost of keeping a *Thermopane* window clean will prove we're right.

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Transport Controls Go to I.C.C.'s Knudson

Johnson steps aside to make way for younger colleague—Commerce department is given authority over steel allocations—Symington to act as coordinator

James K. Knudson, youngest member of the Interstate Commerce Commission in age and length of service, will administer those provisions of the recently enacted Defense Production Act which authorize establishment of priorities and allocations with respect to domestic rail, highway, and inland-waterway transportation. President Truman, in a September 9 executive order, delegated the authority involved to "that commissioner of the Interstate Commerce Commission who is responsible for the supervision of the Bureau of Service of the commission;" and Mr. Knudson became that commissioner by designation of the commission when Commission Chairman J. Monroe Johnson relinquished the assignment on September 11.

I.C.C. Secretary W. P. Bartel announced the change in a "memorandum to the press" issued at 4 p.m. September 11. "At his own request," the memorandum said, "Chairman Johnson has today been relieved of supervision of the Bureau of Service of the commission and, upon motion of Chairman Johnson, Commissioner Knudson was placed in charge of supervision of the Bureau of Service and will therefore function under section 101(c) of the executive order issued by the President on September 9, 1950."

Job Calls for "Younger Man"

After the announcement was made, Chairman Johnson, who was director of the Office of Defense Transportation during World War II, received representatives of the press to explain that he had stepped aside because of his feeling that the job calls for a younger man. The colonel is in his 73rd year. Mr. Knudson, who has been a commissioner since April 20, is 44 years of age.

Colonel Johnson will remain on the commission, and will continue to serve on its Division 3 which handles service matters. Thus he will be available, as he put it, "to assist to the limit of my ability" in the work Commissioner Knudson is undertaking. But, the colonel added, Mr. Knudson "is going to be boss, and I will have none of the responsibility and none of his glory."

Earlier in the interview, the I.C.C. chairman had said that "this thing is going to be a heavy responsibility," and that the country needs a man "that's going to go through with it." He added: "You couldn't expect me to last 10 years . . . I've done my job."

In the latter connection, the colonel emphasized that it was not a matter of his not wanting to do the job, but he thought he acted for the good of the country in giving way to one who would be around to see the job through. He recalled that he had been saying "for two years or so" that he would not take on another war-

time job like the O.D.T. directorship, but "apparently nobody took me seriously."

As to the commission's action in designating Mr. Knudson, the colonel said that his sponsorship of the designee was "well understood" by other members of the commission, and that the matter was "pleasantly discussed" during the commission conference at which the action was taken by "unanimous" vote. The conference was held on the afternoon of September 11.

Reminiscing about his service as director of O.D.T., Colonel Johnson said he "wouldn't take anything for that experience." He added that he had a "great time" in that job, enjoying "every thrill-a-minute of it."

Mr. Knudson was appointed to the commission as successor to the late Carroll Miller for the remainder of a term expiring December 31, 1953. At the time of his appointment he was an attorney on the staff of the Department of Agriculture which he had represented in several rate cases and other proceedings before the commission. Shortly after he became a member of the commission he was assigned to Division 3, of which Chairman Johnson and Commissioner William J. Patterson are the other two members.

The executive order delegating the priorities and allocations authority, which Commissioner Knudson got with respect to rail, highway, and inland-waterway transportation, was issued by President Truman on September 9 to launch the controls setup authorized by the Defense Production Act. On that evening the President delivered a radio address explaining his controls program and his anti-inflation plans which contemplate tax increases beyond those proposed in legislation now pending in Congress. Mr. Truman had signed the Defense Production Act on September 8.

Sawyer Gets Steel Allocations

The executive order delegated authority to establish priorities and allocations with respect to air transport and coastwise, intercoastal, and foreign shipping to the secretary of commerce, Charles Sawyer, who also got like authority with respect to such materials as steel for freight-car building. To the secretary of the interior, Oscar L. Chapman, went like authority over electric power, solid fuels, petroleum, and gas, including pipe, lines for transportation of petroleum and gas. Like authority with respect to food and domestic distribution of farm equipment and commercial fertilizer went to the secretary of agriculture, Charles F. Brannan.

Meanwhile, the delegating order made the chairman of the National Security Resources Board, W. Stuart Symington, the coordinator of the delegated authorities. Among other duties specified in the order, Mr. Symington will "resolve interagency issues which otherwise would require the attention of the President," and "prescribe policy and program directives having the approval of the President."

The order also stipulated that each of those to whom priority and allocation powers were delegated will be "a claimant before the other such delegates" for materials and facilities required to carry out his functions. Thus Commissioner Knudson will be a claimant before the secretary of commerce for steel for freight cars;

and he would be a claimant before the secretary of the interior for fuel, if rail, highway, or inland-waterway carriers encountered fuel shortages.

Scope of Knudson's Authority

As set out in the order, Commissioner Knudson's authority covers "domestic transportation, storage, and port facilities, or the use thereof, but excluding air transport, coastwise, intercoastal, and overseas shipping." The order's definition of "domestic transportation, storage, and port facilities" said that "the term . . . shall include locomotives, cars, motor vehicles, watercraft used on inland waterways, in harbors, and on the Great Lakes, and other vehicles, vessels, and all instrumentalities of shipment or carriage, irrespective of ownership, and all services in or in connection with the carriage of persons or property in intrastate, interstate, or foreign commerce, within the United States, except movement of petroleum and gas by pipe line; and warehouses, piers, docks, wharves, loading and unloading equipment, and all other structures and facilities used in connection with the transshipment of persons and property between domestic carriers and carriers engaged in coastwise, intercoastal, and overseas transportation."

The secretary of the interior got authority over the transportation of oil and gas by pipe line because the order's definitions of "gas" and "petroleum" stipulated that the terms included "pipe lines for the movement thereof." Pipe lines had not been mentioned in the order's delegating provisions. The secretary of commerce got authority over air transport and intercoastal, coastwise, and ocean shipping, and over scarce materials generally, because the order stipulated that he would have priority and allocation powers over "all materials and facilities," except those assigned to the secretaries of interior and agriculture and the I.C.C. member who supervises the Bureau of Service.

Secretary Sawyer followed through promptly to set up arrangements for allocating materials in short supply. On September 11 he announced the establishment within the Department of Commerce of a National Production Authority, headed by William Henry Harrison, who has been president of International Telephone & Telegraph Corp.

The Defense Production Act's grant of priorities and allocations authority is contained in provisions which stipulate that the President is authorized "to allocate materials and facilities in such manner and under such conditions, and to such extent as he shall deem necessary or appropriate to promote the national defense." Among other powers which the President got in the act are those which authorize him to establish price and wage controls.

Rates Exempt from Price Control

As to price controls, rates of common carriers are exempt under a provision which requires, however, that the President or control agency be given notice of proposed changes and an opportunity to make presentations with respect to them before regulatory bodies. The provision, like that under which the Office of Price Administration intervened in rate cases during World War II, reads as follows:

"That no common carrier or other public utility shall at any time after the President shall have issued any stabilization regulations and orders under subsection (b) make any increase in its charges for property or services sold by it for resale to the public, for which

application is filed after the date of issuance of such stabilization regulations and orders, before the federal, state or municipal authority having jurisdiction to consider such increase, unless it first gives 30 days' notice to the President, or such agency as he may designate, and consents to the timely intervention by such agency before the federal, state or municipal authority having jurisdiction to consider such increase."

As to price and wage ceilings, the President announced in his radio address that they would not be imposed at this time. At the same time he warned that "we will impose ceilings vigorously and promptly when the situation calls for them." And his executive order created an Economic Stabilization Agency which will "seek to preserve and maintain the stabilization of the economy," but which will have power to "establish price ceilings and stabilize wages and salaries where necessary."

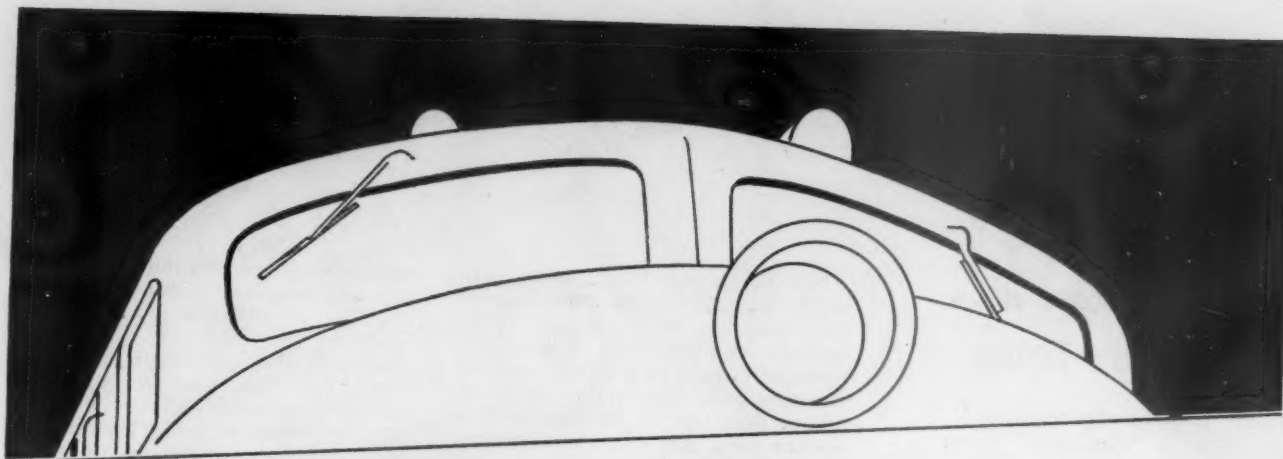
Another executive order required business generally to preserve all records of prices charged and costs incurred during the period from May 24 to June 24, inclusive. The order did not apply to a number of prices which are exempt from the controls legislation, including "rates charged by any common carrier or other public utility."

Among other provisions of the Defense Production Act are those which authorize the President to prevent inventory hoarding, and to requisition materials and supplies needed for the defense program. Also, there are provisions authorizing the government to aid in the financing of defense-plant facilities, and to control the extension of credit. Voluntary agreements to promote the defense program are authorized, and parties participating in them will be immune from prosecution under the antitrust laws.

In that part of his radio address which discussed taxes, the President said the nation should pay for the Korean war and the augmented defense program "as we go, out of taxes." The \$5-billion-tax-increase bill which Congress is now considering at his request "is only the first installment," Mr. Truman continued, adding: "I believe the Congress should enact further tax legislation as soon as possible. Among other things, this should include a just and fair excess-profits tax, which will recapture excess profits made since the start of the Communist aggression in Korea."

A short time later Commissioner Knudson also received members of the press and told them his first efforts would be toward relieving current freight car shortages. He said discussions are being held with various advisory groups on whether to set up immediately a separate defense transportation agency, or whether for the present the job should be handled through existing I.C.C. facilities. In any case, he said, he will continue to work closely with both the I.C.C. and other agencies in the interest of economy and efficiency. He also indicated that plans for a separate agency will be drawn up, so that if the need develops, it can be set up as a separate organization.

In discussing the freight car situation, Mr. Knudson said one "immediate objective" is to increase the car supply, and he added that there is need for 150,000 more freight cars "as fast as we can build them." He also referred to the commission's plans to issue on the following day the service orders increasing demurrage charges, prescribing railroad operating rules, and restricting the use of trap cars, which are outlined elsewhere in this issue. As to "heavy-loading" orders, Mr. Knudson did not expect any to be issued in the immediate future.



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GENERAL NEWS

Emergency Board Raps Brotherhood's Tactics

Finds emergency-creating practice in "flagrant" form

Reporting on its investigation of a dispute involving grievance cases on the New York Central's lines east of Buffalo, N. Y., an emergency board has told President Truman that the "growing practice of creating an emergency in order to bring about the appointment of an emergency board in the hope that it will make favorable recommendations concerning contentions about grievances, with no binding effect if the reverse recommendation should be made, has . . . in the instant case . . . reached a flagrant form."

The emergency board, which reported to the President on September 13, was appointed August 4 to investigate a dispute between the N.Y.C. and four railroad operating brotherhoods—the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen & Enginemen, Order of Railway Conductors, and Brotherhood of Railroad Trainmen. In its report the board condemned the unions for what it called "an effort to extort the payment of hundreds of thousands of dollars based merely on grand lodge officers' own conclusions that their interpretation of awards must be accepted without question."

The principal issue in the case was a disagreement over interpretation of awards of the National Railroad Adjustment Board. There were also a number of other grievances, approximately 90 of which the board found to be "within the peculiar cognizance of the . . . Adjustment Board." Also included in the dispute were demands for rule changes, and for a large number of improvements in facilities used by employees. In connection with the latter demands, the emergency board said they appeared to have been incorporated into the dispute "as make-weight to the demands concerning grievances in order to justify the creation of an emergency."

Members of the emergency board were Chairman Frank M. Swacker, Paul G. Jasper and Wayne Quinlan. The board recommended that the grievance disputes be submitted to the Adjustment Board, or a special adjustment board, or an arbitration board; and in respect to the other disputes the board found that "all reasonable steps to satisfy those which we believe to be reasonable are being taken."

The Adjustment Board award over which disagreement first arose involved yard operations at the N.Y.C.'s Weehawken terminal yard. Road train crews were required to set off some of the cars from their trains at North Bergen yard and the balance in Weehawken yard, all within the terminal limits. Claim was made for a yard day for each member of such road crews, and the Adjustment Board sustained this contention. According to the report, the road began to pay these claims, but the B.R.T. general chairman handling the matter insisted there were numerous additional claims.

The grand lodge officers of the four train service organizations were called in, and the claims expanded to where the unions insisted that all employees who had performed the work in question were entitled to an award, whether they filed claims or not; that when the whole train was left at North Bergen yard excepting the caboose an award was applicable; that the road crews were entitled to not one but two days' pay in addition to their road pay on the theory that they performed yard service at two yards; and that, furthermore, yardmen should be paid for each transaction on the basis that they should have performed the work.

In view of these demands, the board said, the road asked the unions to join in seeking an interpretation from the Adjustment Board. The unions declined however, saying the "issue of principle" had already been subject to the Adjustment Board's ruling. The road then obtained from the Adjustment Board an ex parte interpretation upholding some of its contentions.

Discussing the unions' attitude with respect to the above situation, the emergency board said the action of the grand lodge officers "in supposed conformity with this policy involves their constituting themselves claimant, judge and jury to determine the issue of whether or not the award covers either directly or in principle the claims here involved." The board then concluded that "the carrier is certainly entitled to a day in court" on the issues.

It was during this initial controversy that interpretation and application of other Adjustment Board awards was questioned by the Conductors, Firemen & Enginemen, and Engineers. The emergency board concluded that these combined grievances were "primarily responsible" for the strike ballot that was circulated, and at the same time they were matters which should be settled through the Adjustment Board.

As to the various "makeweight" demands which were included in the strike ballot of the brotherhoods, the

emergency board said the most important of these was a request for the abolition of all rules providing time limits on the filing and handling of claims. In this connection, the board found that "the time is long since passed when there was any justification for failure to bring forward any old claims," and added that it would be a "most grievous backward step to terminate the time limitations agreements" now in effect.

B. R. T.-O. R. C. Case Still in Impasse

"No-progress" meetings go on; statements point up deadlock

Members of the National Mediation Board continued during the past week to hold meetings with representatives of management and the involved unions on the wage and rules dispute arising out of demands of the Brotherhood of Railroad Trainmen and Order of Railway Conductors. As of September 13, the report of "no progress" was still coming out of the meetings.

The present series of meetings got under way September 6 when the parties came together for the first time since August 23, the day on which the B.R.T. and O.R.C. issued the strike call that prompted President Truman to seize the railroads for operation by the secretary of the army. (See *Railway Age* of August 26, page 43, and September 2, page 71.) Although he has been unable to attend all recent meetings, Dr. John R. Steelman, assistant to President Truman, is still functioning as principal mediator in the case.

It was on the basis of a proposal made by Dr. Steelman and rejected by the B.R.T. and O.R.C. that the Switchmen's Union of North America settled its case which, like that of the B.R.T. and O.R.C., involved principally a demand for a five-day, 40-hr. week for yardmen with no loss in the take-home pay which those employees have been receiving for a six-day, 48-hr. week. (See *Railway Age* of September 9, page 68.) As this issue went to press, it was reported in Washington that D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen, which also has 40-hr.-week demands pending, would confer with Dr. Steelman during the latter part of this week.

Meanwhile, the impasse in the

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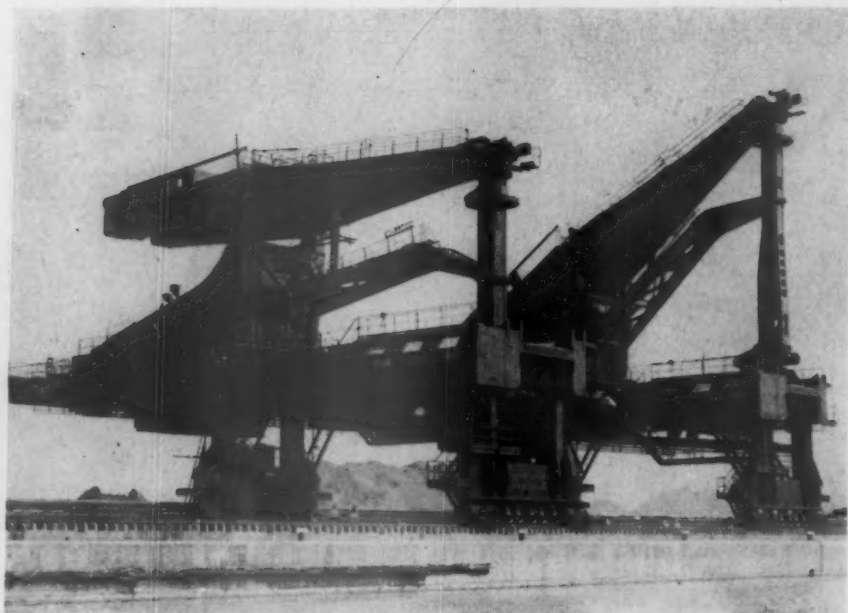
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B.R.T.-O.R.C. case was pointed up by a statement issued September 7 by Presidents W. P. Kennedy and R. O. Hughes of those unions, and the reply made the following day by L. W. Horning, D. P. Loomis, and C. D. Mackay, chairmen, respectively, of the eastern, western, and southeastern conference committees which represent railroad management. The Kennedy-Hughes statement summarized a letter which those labor leaders had written to Messrs. Horning, Loomis and Mackay to advise that "any satisfactory settlement of the rules issue must be based upon the principle that yard service employees receive 48 hours' pay for 40 hours' work," and that the settlement should be effective October 1 or retroactive to that date if reached thereafter.

The Steelman proposal which settled the Switchmen's case provides for a wage increase of 23 cents per hour, effective October 1, and quarterly cost-of-living adjustments and adoption in principle of the five-day, 40-hr. week but deferment of its installation. Also, there were other adjustments based on the emergency-board report which the B.R.T. and O.R.C. rejected. As to these other adjustments, the Kennedy-Hughes statement said their unions wanted them, too, effective as of July 1, "as recommended in the report."

As their reply to the statement, Messrs. Horning, Loomis and Mackay made public a letter they had written to Messrs. Hughes and Kennedy. In it they told the union leaders that "your ultimatum as to the provisions you state must be contained in any settlement, and among which you now include the principle of retroactivity,

is not acceptable to the carriers and is hereby rejected."

The letter, as it said, also confirmed the "repeated statements of the management representatives that the railroads are and have been agreeable to accepting the recommendations of the President's emergency board." It also confirmed statements that the carriers have been willing to accept the Steelman proposal. This is evidenced by the settlement on that basis with the Switchmen' Union, the letter added. It went on to say that Messrs. Kennedy and Hughes had accused the carriers "of failing to negotiate . . . in good faith."

"This," the letter continued, "we emphatically deny and point out that your arbitrary stand that your demands be granted in full and your refusal to accept either the recommendations of the President's emergency board or the proposal of the government, places upon you the entire responsibility for failure to reach a settlement through collective bargaining."

"Your demands for 48 hours' pay for 40 hours worked for yard service employees are not justified under any theory you have advanced. You have argued that such had been the practice in outside industry. This was completely disproved in the hearings before the President's emergency board and by the report of that board. The President of the United States would produce for yard service employees represented by you rates at least as high as they would receive if given wage treatment exactly the same as that given the non-operating employees. Thus there is no merit in the argu-

ments advanced by you in support of your demand. . . .

"Your letter of September 6 merely reiterates demands made by you at the first conference between us after publication of the report of the President's emergency board. You apparently desire to accept such portions of the board's report as happen to suit you and reject the balance."

Tie Men Hold Annual Meeting

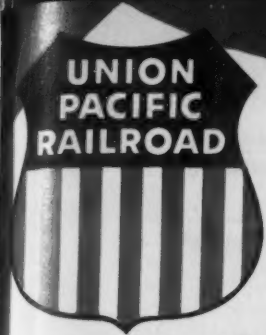
Producers and consumers discuss mutual problems

The Railway Tie Association held its 32nd annual meeting at the Brown Hotel, Louisville, Ky., August 28-30. The attendance totaled approximately 325 members and guests, of whom 99 were railroad men.

Features of the three-day meeting of particular interest to railroad men were addresses by Wayne A. Johnston, president, Illinois Central, on "Partners in the Railroad Industry"; by C. H. Blackman, chief engineer, Louisville & Nashville, on "One Hundred Years of Ties on the L.&N."; by Clarence S. Burt, assistant to vice-president, purchases and stores, I.C., on "The Last 50 Years and the Next in the Crosstie Industry"; by G. M. Magee, research engineer, engineering division, Association of American Railroads, on "What the A.A.R. Is Doing to Extend Service Life of Ties"; by W. E. Tiller, president, Tiller Tie & Lumber Co., on "As A Tie Man Sees the Next 12 months"; and by Paul D. Brentlinger, forester, Pennsylvania, on "Stacking Crossties for Seasoning."

Reports of particular interest to users of crossties were those of the committees on Checking and Splitting of Crossties, of which J. A. Vaughan, Southern Wood Preserving Company, was chairman; on Mechanical Handling of Crossties, of which John Wright, Koppers Company, was chairman; and on Timber Conservation, of which D. B. Mabry, of the T. J. Moss Tie Company, was chairman.

In the election of officers, W. P. Arnold, executive assistant to the vice-president and general manager of the Wood Preserving division, Koppers Company, Pittsburgh, Pa., was advanced from first vice-president to president; J. R. Keig, Kirby Lumber Corporation, Beaumont, Tex., was advanced from second vice-president to first vice-president, and W. J. Chambliss, Bond Bros., Louisville, was elected second vice-president. Elected to the executive committee were Harry Dunstan, Southern Wood Preserving Company, Atlanta, Ga.; Fred McWhinney, Gillis & Co., Chicago; J. E. Peterson, Gross & Jones Co., St. Louis, Mo.; M. S. Hudson, Taylor-Colquitt Company, Spartanburg, S. C.; and



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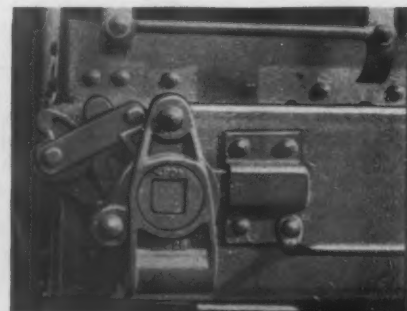
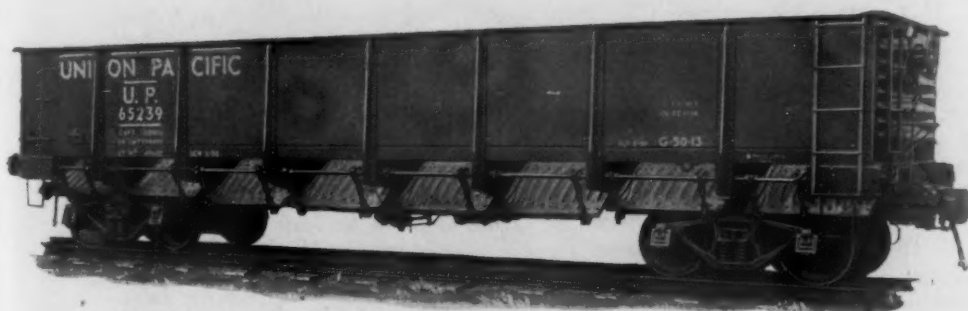
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E. W. Jones, T. J. Moss Tie Company, St. Louis. Roy M. Edmonds was re-elected secretary-treasurer by the executive committee.

Partners with Railroads

In his address Mr. Johnston explained that he had first intended to discuss the mutual progress being made by the railroads and tie producers "back toward the tie standards we had before World War II," but actually his remarks were very much concerned with the service that the tie producers can render the railroads during times of emergency, such as that which has now developed. "The service given by a railway tie," he said, "will be particularly important during a period when men are leaving our industries and our railroads to go into uniform. You all know what manpower requirements were during the last war. The Illinois Central had more than 10,000 employees in the armed services, and we had no trackmen to spare. Obviously, the fewer renewals, the less drain upon our manpower. You men in the tie industry are partners with us in the railroad industry. It is in this spirit of partnership and working together that I ask you to do everything in your power to help us meet every demand made upon the railroad industry."

Discusses Future Requirements

Mr. Blackman's address was, in effect, the history of the growth and development of the L.&N., especially as regards the evolution of its track construction. He pointed out that a chart was available showing that a life of 8 to 9 years was obtained from untreated white oak ties, of 30 years for untreated cypress ties, and up to 50 years for heart yellow pine, when not subjected to destruction by heavy traffic. However, he pointed out that cypress and heart yellow pine are no longer available and, if available, would be destroyed by the present heavy traffic. He said that the railroad is now realizing a life of about 23 years from its creosoted red oak and black gum ties, and he expects that, as more track is laid with heavy rail and large tie plates, the average life of ties should be increased to about 30 years.

Discussing future purchases of crossties by the L.&N., Mr. Blackman said that these would depend on various factors including business conditions and the steps that railroad managements take to meet the competition of other forms of transportation. Assuming present business conditions and a continuing aggressive management he expects that tie purchases by his road in 1950 will total 770,500 ties, and that these purchases will decline progressively to a total of 710,200 ties in 1954.

The first part of Mr. Burt's address was also largely of an historical nature. Following the progress of the last 50 years, he said, "we now find ourselves with a well-manufactured



W. P. Arnold
President-Elect
Railway Tie Association

and properly-treated crosstie—one from which we expect a service life of 20 to 25 years. But that is definitely not enough. We are still far from being satisfied with our product. There is an old railroad saying—"When you feel well pleased with yourself—sand the track, fellow—you're slipping."

According to Mr. Burt, the opinion of many leading railroad engineers is that the number one problem facing railroad maintenance men in the United States today is extension of the service life of crossties. He then submitted a list of practices designed to help achieve this end. These are: (1) More general use of American Railway Engineering Association specifications; (2) uniformity of inspection; (3) standardization of pre-boring, reducing to a minimum the number of hole combinations; (4) extension of the use of heavier rail; (5) increased use of welded rail; (6) larger and improved tie plates and anchor spikes; (7) wider use of tie pads; (8) extended use of anti-splitting devices; (9) improved fasteners to take the place of the cut spikes; (10) coated ties to reduce absorption of water and subsequent decay; (11) more and better ballast, cleaner and better drained; (12) more stable roadbed; (13) more test sections of crossties; (14) larger ties for main-line track; (15) improved seasoning practices; (16) better treatment methods—including heavier retentions of preservatives; and (17) speeding up the movement of ties from the woods to treating plants.

Research Program Described

Discussing the various major research projects now under way with the objective of finding ways to extend the service life of crossties, Mr. Magee pointed out that present methods of treating ties will protect them from decay rather satisfactorily, at least to the extent that a much longer life could be obtained from ties now being used if they could be adequately protected against abrasion from tie plates. Another serious factor in short-

ening tie life, he said, particularly in treated new ties, is splitting and checking.

Mr. Magee said that the A.A.R.'s research program is divided into several phases, including field and service tests being carried out on various railroads with the aid of the association's research staff and equipment. It also includes a joint crosstie research project with the National Lumber Manufacturers' Association, which is being carried out in the laboratory at Washington, D. C., of the Timber Engineering Company. He referred also to the fact that an accelerated tie wear testing machine has been designed and constructed in the laboratory of the American Brake Shoe Company at Mahwah, N. J., and that this company has cooperated in research work by making its machine available for various tests.

After describing development of new tie plate designs and sizes for the purpose of reducing tie wear, Mr. Magee discussed in some detail the efforts that are under way to develop hold-down fastenings and other means of reducing the destructive action of tie plates relative to the ties. The most extensive field test of this type is on the L.&N. near London, Ky. He pointed out that, in addition to hold-down fastenings, this installation includes test coatings applied between the tie plates and ties to seal out the moisture and prevent movement, and various designs of tie pads.

Referring to the joint investigation being carried out in conjunction with the N. L. M. A., Mr. Magee said one phase of this investigation has led to the belief that intensity of bearing pressure is not the most important factor in contributing to tie wear. He implied that there was considerable evidence to indicate that deterioration of wood fibres in the tie-plate area was due to chemical action induced by the presence of moisture. It is also believed, he said, that presence of sand and grit between the tie plate and tie was a factor of some consequence in abrasive action.

"The goal of this joint investigation," he said, "is to develop a means of treating ties without splits or checks, providing a waterproofing surface which will prevent moisture change during seasonal variations, together with a means of effectively controlling the rate of tie abrasion from tie plates. If measures to accomplish this can be developed at an economical cost, it does not seem too much to anticipate a tie life of 35 to 40 years in the future."

The address by Mr. Brentlinger comprised a discussion of the reason for seasoning wood in the crosstie industry, after which he reviewed the various methods of storing ties in order to arrive at an appreciation of why ties are stacked. He concluded that "much remains to be proven concerning the seasoning of ties, and the railroads who maintain large stocks and producers of ties should be working (Continued on page 79)

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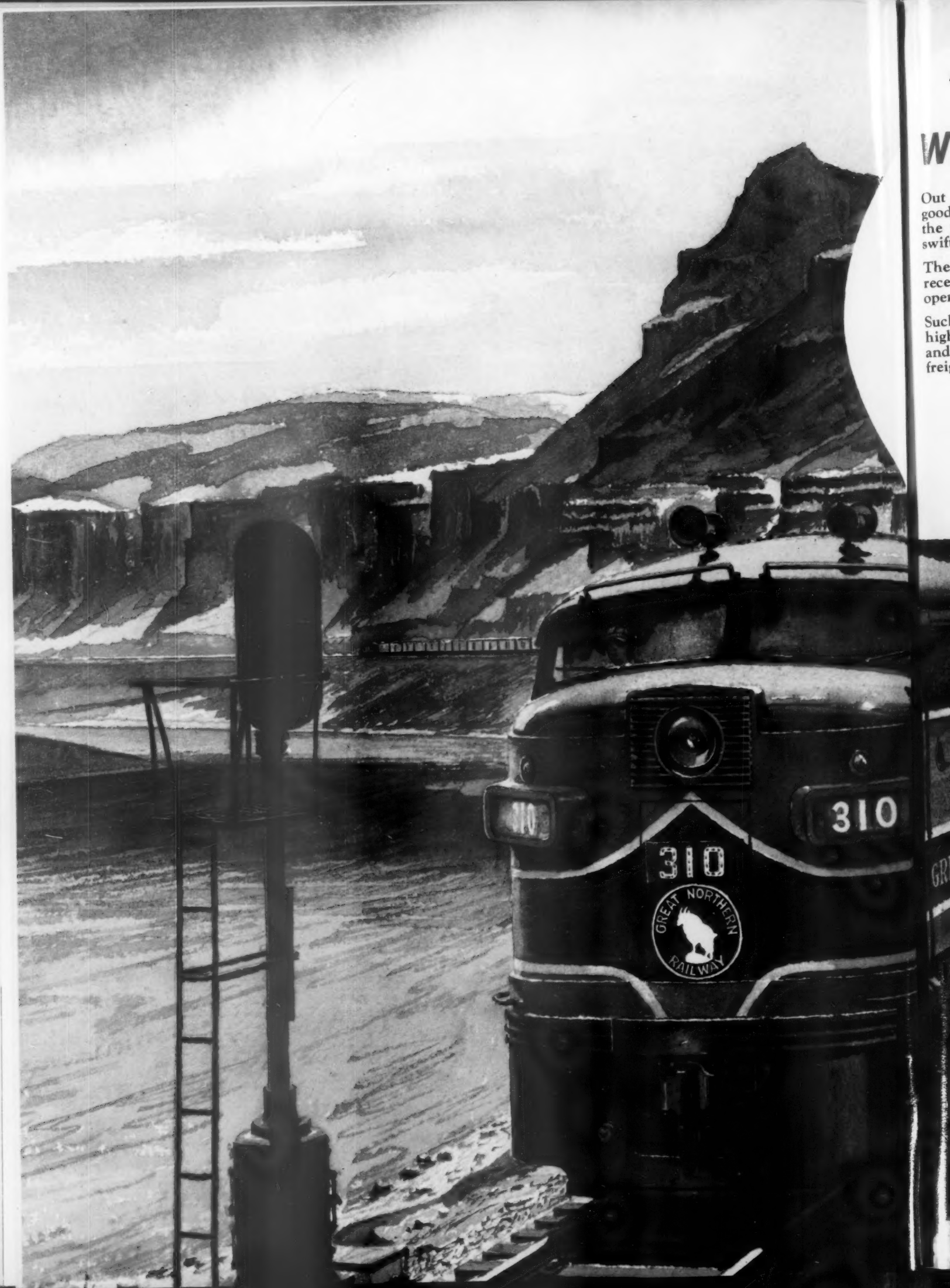
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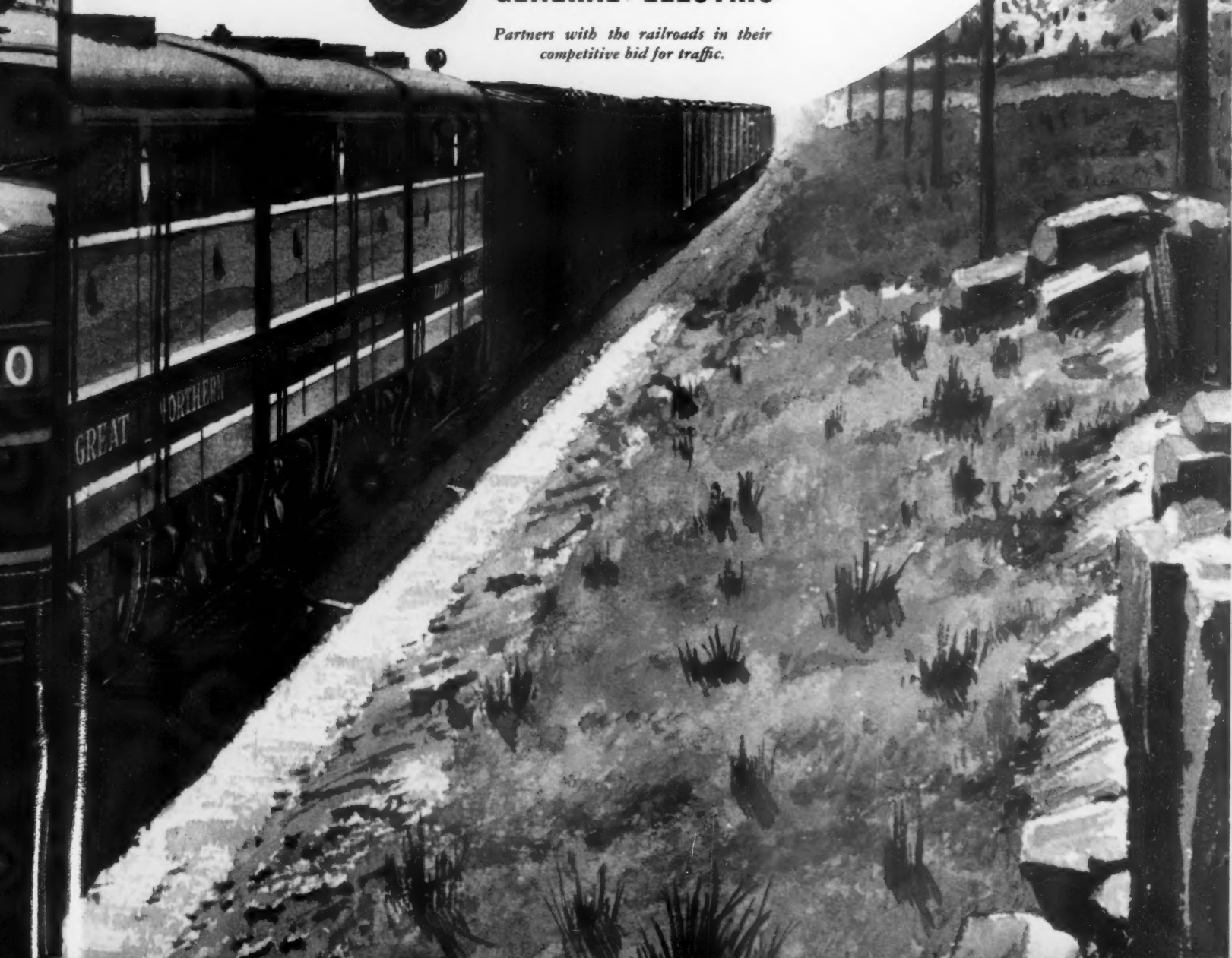


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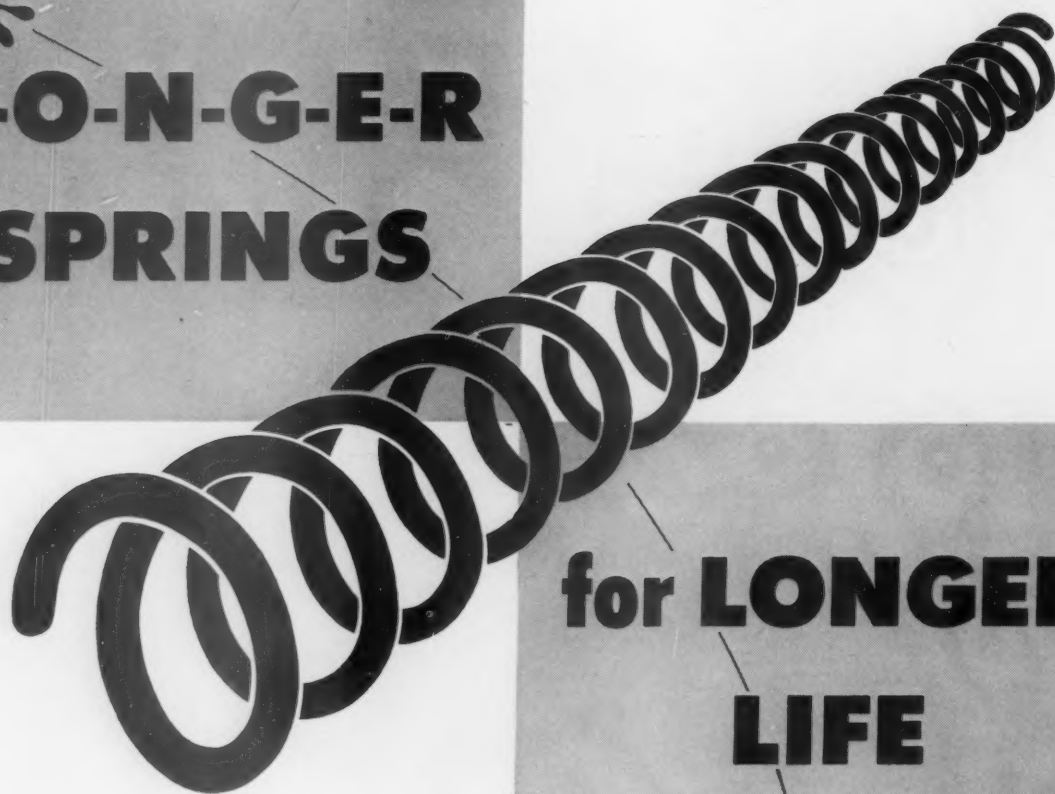


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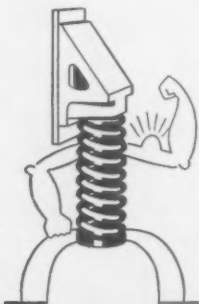
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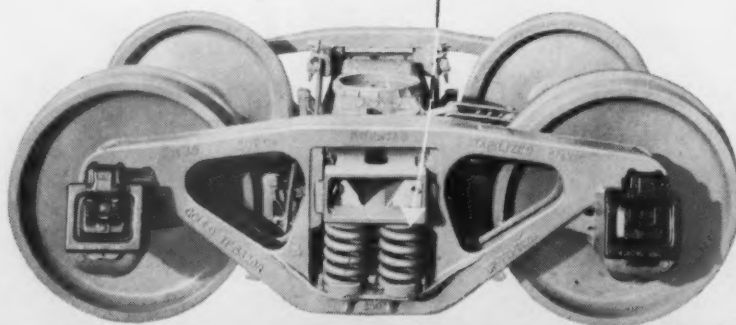
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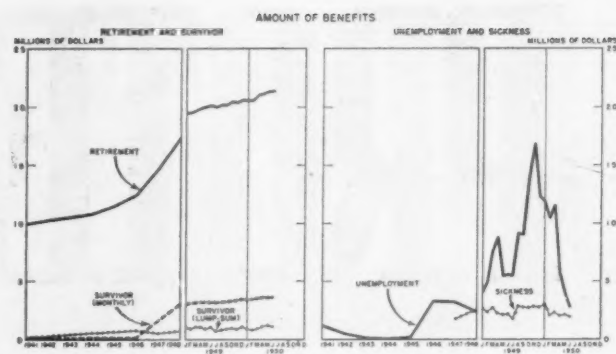
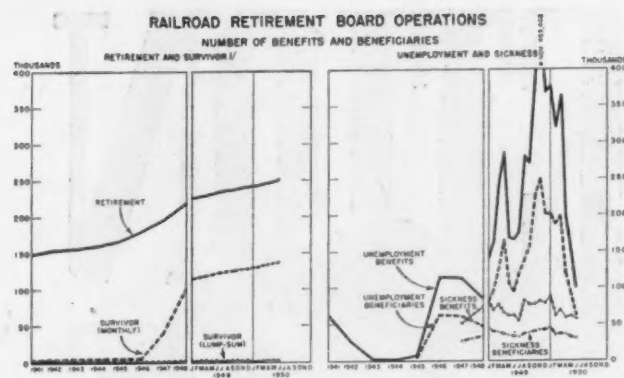
The side springs increase the capacity of the Barber Truck since they carry their share of the load.



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TRENDS OF A DECADE can be traced through this summary of operations of the Railroad Retirement Board since 1941. The impact of the 1946 amendments, particularly in survivor and disability benefits, is clearly demonstrated. These charts are based on monthly averages except for the 1949 and

1950 figures, which are based on straight monthly data. Survivor beneficiaries total about 20 per cent more than the number of benefits due to the frequent division of payments among more than one survivor within a family

(Continued from page 74)

together for the answer that will reduce costs for the railroads and result in a better product for the producer to sell."

Must Look Ahead to 1952

Because of the return of war conditions Mr. Tiller was not optimistic regarding the profit-making possibilities of the tie producers during the next 12 months. However, it is his "considered opinion" that most all roads are amply protected on their 1951 requirements regardless of how many ties may be required. His opinion is that the railroads must now begin to think of securing enough ties to meet their requirements during 1952. Because of the international situation and resulting probable increase in railroad earnings he said that the railroads will be required to spend more money on track maintenance. This condition will definitely contribute to increased demand and use of more crossties, he added.

The report of the committee on Checking and Splitting of Crossties was devoted entirely to a discussion of vapor drying as a means of preventing

these forms of damage to crossties. The discussion included a description of the vapor-drying process and its objectives, the results of the committee's observation of vapor-dried oak crossties immediately after drying and treatment, a description of the condition of vapor-dried crossties in test tracks that were inspected and the presentation of data regarding the cost of the vapor-drying process and of equipment required for this process.

33 Guardsmen Killed, 50 Injured, in P. R. R. Wreck

Thirty-three members of the 28th Division of the Pennsylvania National Guard were killed and 50 others injured, three of them critically, when the westbound "Spirit of St. Louis" ran into the rear of a special troop train on the Pennsylvania one mile east of West Lafayette, Ohio (near Coshocton), at 6:15 a.m. Eastern Daylight Time on September 11. Four trainmen, including the engineman of the "Spirit," were also injured.

The 20-car troop train, which was carrying members of the recently federalized guard division from Carbon-dale, Pa., and Wilkes-Barre to Camp Atterbury, Ind., for training, had been stopped by a broken air hose. The "Spirit of St. Louis," following about five minutes behind, consisted of a two-unit Diesel-electric locomotive and 17 cars, and was estimated to have been traveling about 45 m.p.h. at the time of the accident. The two rear coaches of the troop train were reported "smashed," while the third coach from the rear were derailed but was not damaged as severely as the last two. The locomotive and three baggage cars of the "Spirit" were also derailed, but the engineman was the only person on that train who was reported injured. All deaths, and other injuries, occurred in the troop train, principally in the last two cars, where most of the men were asleep.

No information as to the cause of

the accident has been made available, pending railroad and Interstate Commerce Commission investigations. The railroad has stated, however, that the territory where the accident occurred "is equipped with the most modern signaling and protective devices," including automatic position light way-side signals and cab signals. The flagman of the troop train was reported to have set out the usual warning signals about 100 yd. to the rear of the train.

Following an unusual, though not unprecedented, procedure, the I.C.C. on September 12 instituted a formal proceeding for investigation of the accident. The proceeding is docketed as Ex Parte No. 173, and public hearings opened at Pittsburgh, Pa., on September 13 before Commissioner Patterson and Examiner E. J. Hoy.

It was stated at the commission's offices that the latest previous formal investigation of a railroad accident was made 30 years ago, in 1920, the involved accident having occurred on the Denver & Rio Grande Western. Between 1912 and 1920, there were 15 such investigations, seven of them being inquiries into accidents on the New York, New Haven & Hartford.

The usual commission procedure is to have train accidents investigated by its Bureau of Safety which conducts informal inquiries, i.e., members of the bureau's staff interview, or receive statements from, the involved railroad employees or others having pertinent information, but do not hold public hearings or receive sworn testimony. In recent years, however, reports on these bureau investigations have been issued as commission reports, usually by Commissioner Patterson.

Reports of the first day's investigation stated that William Eller, engineman of the "Spirit of St. Louis," a veteran of 47 years' service, admitted running past a "caution" indication on an approach signal approximately two miles from the wreck. He estimated

(Continued on page 82)

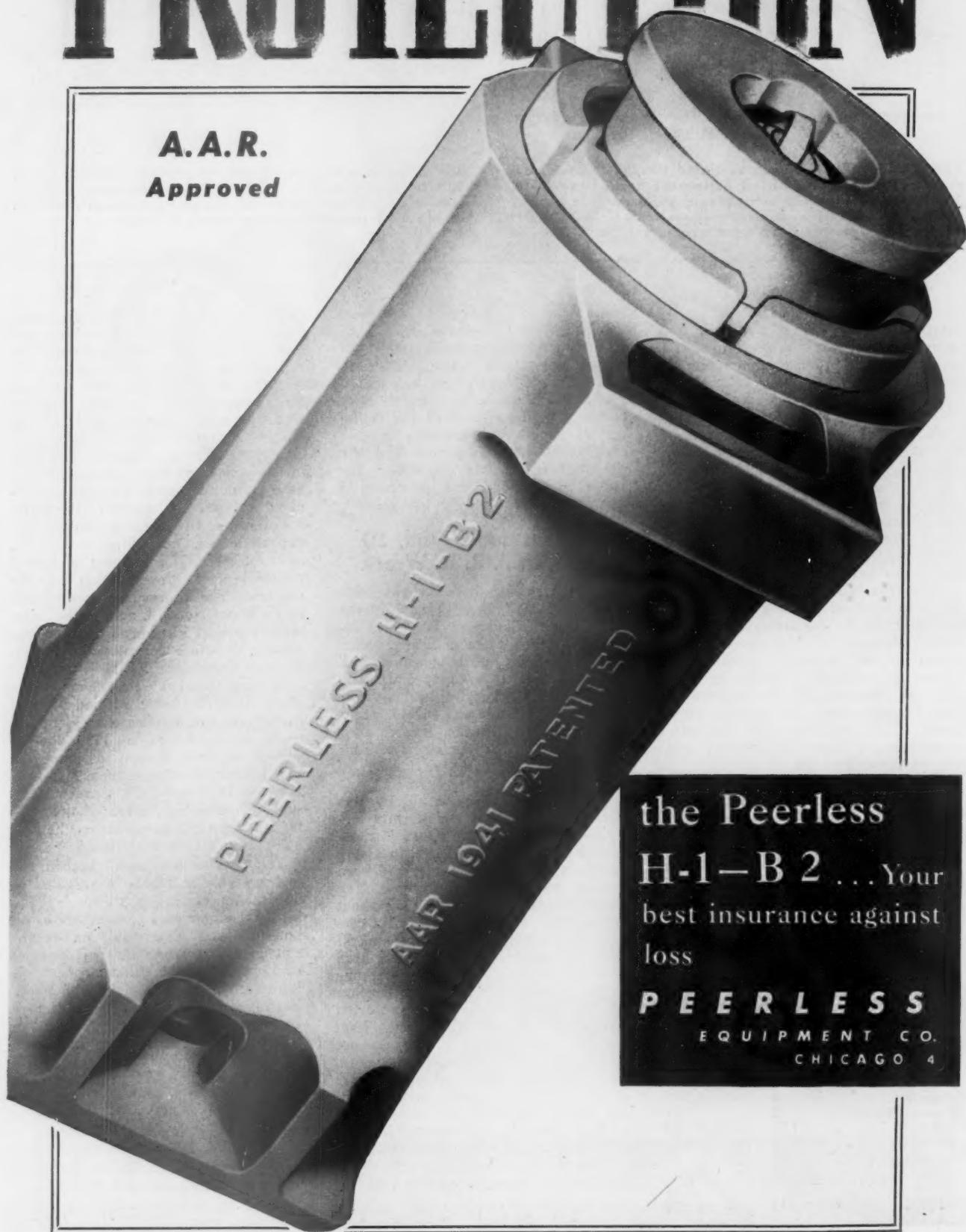
Car Surpluses and Shortages

Average daily freight car surpluses and shortages for the week ending September 9 were announced by the Association of American Railroads on September 14 as follows:

	Surplus	Shortage
Plain Box	0	19,811
Auto Box	8	257
Total Box	8	20,068
Gondola	0	6,446
Hopper	0	4,661
Covered Hopper	0	137
Stock	111	20
Flat	205	1,465
Refrigerator	3,032	0
Other	290	241
Total	3,646	33,038

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the Peerless
H-1-B 2 ... Your
best insurance against
loss

PEERLESS
EQUIPMENT CO.
CHICAGO 4

Here's visible proof
of the superior quality of
Pittsburgh's Alkali- and Acid-Resisting
CARHIDE



A. C. & Y. uses covered hopper cars like this in daily service for more than two years to haul corrosive soda ash—without need of refinishing!

American railroad men have long recognized the superior performance of Pittsburgh CARHIDE as a freight car finish.

● **Now**, Pittsburgh announces its new alkali- and acid-resisting CARHIDE to provide exceptional protection for covered hopper cars used to haul alkalis which speedily destroy ordinary finishes.

● **Hundreds of cars** painted with this new CARHIDE have been in service on railroads in many parts of this country for periods ranging from one to more than two years with unusually satisfactory results.

● **The severest** as well as the longest test to which this protective finish has been subjected is that of a car operated by the A. C. & Y. railroad. This car has hauled soda ash continuously for more than 26 months. Although soda ash is the most corrosive of all dry cargoes, this car shows little effect of its rigorous use.

● **Besides unusual** resistance to corrosive loadings, this new CARHIDE has high resistance to abrasion. It can be scrubbed repeatedly without affecting its protective quality. CARHIDE goes on quickly and easily and dries rapidly so that one-day finishing schedules are readily maintained.

● **If your line** has cars required for such loadings as soda ash, sulphur, phosphate, cement, lime, common salt, alkalis, acids, crude oils and alcohols, it will pay you to investigate what this new alkali- and acid-resisting CARHIDE can do for you. Call on us for suggestions and advisory service. Our extensive experience in providing railway finishes for every need can save you time and money.

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Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Div., Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.



PITTSBURGH PAINTS

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(Continued from page 79)

the speed of his train at that time at 50 m.p.h., but the locomotive speed recorder tape showed the train was going about 63 m.p.h. after it passed the approach signal, where it should have been slowed to 30 m.p.h.

Freight Car Loadings

Loadings of revenue freight in the week ended September 9, which included the Labor Day holiday, totaled 751,276 cars, the Association of American Railroads announced on September 14. This was a drop of 101,045 cars, or 11.9 per cent, below the previous week, an increase of 127,314 cars, or 20.4 per cent, above the corresponding week last year, and a decline of 37,735 cars, or 4.8 per cent, under the equivalent 1948 week.

Loadings of revenue freight for the week ended September 2 totaled 852,321 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, September 2			
District	1950	1949	1948
Eastern	148,738	126,564	157,675
Allegheny	174,391	133,176	182,567
Pacahontas	63,187	48,563	71,913
Southern	128,667	104,514	129,981
Northwestern	143,703	124,610	146,934
Central Western	130,917	111,951	137,796
Southwestern	62,718	54,556	68,265
Total Western	337,338	291,117	352,995
Districts	852,321	703,934	895,131
Total All Roads	852,321	703,934	895,131
Commodities:			
Grain and grain products	50,851	45,456	51,212
Livestock	9,431	11,077	11,143
Coal	155,559	120,882	179,721
Coke	14,893	9,178	14,805
Forest products	49,635	37,103	50,925
Ore	83,296	63,260	77,422
Merchandise I.C.I.	90,842	83,858	108,246
Miscellaneous	397,814	333,120	401,657
September 2	852,321	703,934	895,131
August 26	838,429	747,211	891,666
August 19	851,025	731,215	900,663
August 12	847,465	728,029	891,276
August 5	837,218	716,863	878,647
Cumulative total			
35 weeks	25,131,598	25,126,398	28,708,577

In Canada.—Carloadings for the week ended August 19, reporting of which was delayed because of the strike of non-operating employees of Canadian railroads from August 22 to August 31, totaled 84,026 cars, compared with 75,433 cars for the previous week, and 79,171 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
August 19, 1950	84,026	33,512
August 20, 1949	79,171	29,341
Cumulative totals for Canada:		
August 19, 1950	2,423,227	1,026,209
August 20, 1949	2,392,338	1,018,869

Brannan Asks for More Efficient Use of Cars

Secretary of Agriculture Brannan has requested shippers of agricultural commodities to load and unload box cars promptly and to fill them to maximum capacity.

"Maximum use of box cars by shippers of agricultural freight is impera-



POSTMASTER GENERAL JESSE M. DONALDSON examining some of the equipment being used in a joint industry-government experiment to determine whether or not some of the newest methods of materials handling can cut the cost of handling some storage mail. Approximately 64 of these 40-cu.-ft. capacity containers can be placed in a standard mail car, and with the load that each one takes, it is expected that the load of mail in the car will compare favorably with any manual loading. Mr. Donaldson, incidentally, is standing in a doorway of one of the Pennsylvania's new mail storage cars, development of which was mentioned in last week's *Railway Age* (page 78)

tive under present conditions," Secretary Brannan said in a September 1 statement. "Officials of the Interstate Commerce Commission and of the Association of American Railroads have discussed with department representatives the critical shortage of box cars that faces the country today To set an example for other shippers, the Production and Marketing Administration, which handles shipment of grain controlled by the Commodity Credit Corporation, is loading cars to maximum capacity and trying to eliminate all unnecessary delays in loading and unloading. Observance of these measures by all shippers, together with faster turn-arounds by the railroads, will do much to 'stretch' the use of scarce equipment."

Soda Ash Shortage Hits Use of Steam Power

The shortage of soda ash which has been building up for the past three months as a result of strikes in plants of suppliers, has commenced to pinch those roads which use a lot of steam motive power. Four large users of steam power in the midwest—C.R.I. & P., C.M.S. & P., I.C., and C.&N.W.—are down to rock bottom on available supplies. Unless new supplies of this chemical, which is used to treat the

water for steam locomotives, are forthcoming soon these roads will be forced to emergency measures. The scant available supplies are being stretched as far as possible through very careful control of use and distribution. Two roads have started shipping supplies of soft water into hard water areas in order to reduce need for water treatment.

Two Bulwinkle-Act Pacts Effective Next Month

The rate-procedures agreement entered by Eastern railroads and the joint-action agreement entered by railroad parties to the car hire, demurrage and storage rules which are administered through the Association of American Railroads will become effective October 15 and October 7, respectively. These effective dates were fixed by Division 2 of the Interstate Commerce Commission in orders dated August 28.

The agreements involved were framed pursuant to provisions of the Reed-Bulwinkle Act, which is now section 5a of the Interstate Commerce Act. Some time ago they were approved by the commission, subject to conditions calling for modifications of a relatively minor nature. (See *Railway Age* of March 18, page 81, and March 25, page 67.)

Division 2's August 28 orders noted that the parties to the agreements had advised the commission that the conditions had been accepted and the agreements modified accordingly. The eastern roads' case was docketed as Section 5a Application No. 3, while that involving the car hire, demurrage and storage rules was Section 5a Application No. 7.

Harriman Safety Awards To Be Made September 20

The E. H. Harriman memorial gold medals for the best railroad safety records in 1949 will be awarded at a dinner in the Hotel Ambassador, New York, on September 20. The Norfolk & Western will receive the gold medal for class A railroads (those operating more than 10,000,000 locomotive-miles annually); the Western Maryland for class B railroads (those operating less than 10,000,000 but more than 1,000,000 locomotive-miles each year); and the Colorado & Wyoming for class C railroads (those operating less than 1,000,000 locomotive-miles a year).

Certificates of commendation for outstanding performance in railroad safety will be awarded to the following: Eastern district—(class A), Erie, (class B), Pennsylvania-Reading Seashore Lines, (class C), Detroit & Mackinac; Western district—(class A), Union Pacific, (class B), Duluth, Missabe & Iron Range, (class C), Texas Mexican; Southern district—(class A), Louisville & Nashville, (class B), Gulf, Mobile & Ohio, (class C), Tennessee Central. This year two ad-

ditional certificates of commendation will be awarded to these switching and terminal companies: Group ST-1, Baltimore & Ohio Chicago Terminal, and, group ST-2, Birmingham Southern.

The awards will be presented by James G. Lyne, editor of *Railway Age* and chairman of the award committee of the American Museum of Safety. Wallace J. Falvey, president of the museum, will preside. Col. Robert S. Henry, vice-president, Association of American Railroads, will speak at the dinner. Julien H. Harvey, chairman of the Arthur Williams memorial award committee, will present the Arthur Williams memorial medal to Arthur V. Rohweder, superintendent of safety and welfare of the D.M. & I.R.

Rep. Bulwinkle Dies

Representative Alfred Lee Bulwinkle, Democrat of North Carolina, died at his home in Gastonia, N. C., on August 31. Mr. Bulwinkle was co-author with the late Senator Clyde Reed, Republican of Kansas, of the Reed-Bulwinkle Act which grants immunity from the anti-trust laws to carriers participating, with approval of the Interstate Commerce Commission, in rate-procedure agreements and other joint actions relating to rates and charges. Provisions of the act are embodied in section 5a of the Interstate Commerce Act.

Except for the 1929-31 period, Mr. Bulwinkle had been a member of Congress since 1921. Next to Chairman Crosser, Democrat of Ohio, he was the ranking majority member of the House committee on interstate and foreign commerce.

Early Resigns Defense Job; Will Return to Pullman

Stephen T. Early, deputy secretary of defense since April, 1949, this week announced his resignation from that position. Mr. Early, who has been on leave from Pullman, Inc., is expected to rejoin the company following a vacation. He has been a vice-president of the firm for several years.

In accepting Mr. Early's resignation, President Truman thanked him for his service to the nation, and praised his work in the Defense Department. Mr. Early has been in public service for many years, having served as press secretary to the late President Roosevelt from 1933. At the time of his election to the Pullman vice-presidency, Mr. Early was serving as special assistant to President Truman.

Texas Employees Would Operate Abandoned Service

Railway labor unions, meeting at Austin, Tex., on September 5 are reported to have suggested a plan to form a company to operate train service which railroads have abandoned because of operating losses.

Joseph I. Steadham, chairman of the Joint Railway Labor Legislative Board, said the labor organizations would try to work out at a future meeting the idea of creating a corporation in Texas through which employees could operate discontinued passenger, mail and express service. About 6,000 mi. of such service have been discontinued, he said, since a 1949 decision by the Texas Supreme Court that rail lines cannot be forced to continue service at a loss.

Mr. Steadham estimated that if abandoned service could be restored it would provide work for 250 transpor-

tation employees plus about 300 station employees; and is said to have added that:

"Employees who have had many years of experience on these lines of railroad believe they can operate this service at actual out-of-pocket expense, and at the same time pay stipulated Interstate Commerce Commission rates for leased rolling stock.

"Employees representatives believe they can, with permission of the I.C.C. and heads of their organizations, organize a corporation and reestablish much of the rail service that has been abolished and increase that volume of business to the greatest in the history of railroading. We can do this by making the proper connections through a long-haul passenger,



BALLAST IS SCREENED BY CONTRACT — ELIMINATING INVESTMENT BY RAILROADS IN THIS ONE OPERATION EQUIPMENT . . .

Stone ballast cleaned by the Speno method is thoroughly cleaned because it is screened twice. In order to obtain a thorough cleaning, two passes are necessary to restore the ballast to as clean a condition as when it was originally placed in the track. The two passes are accomplished in less time than a single pass by other mechanical methods.

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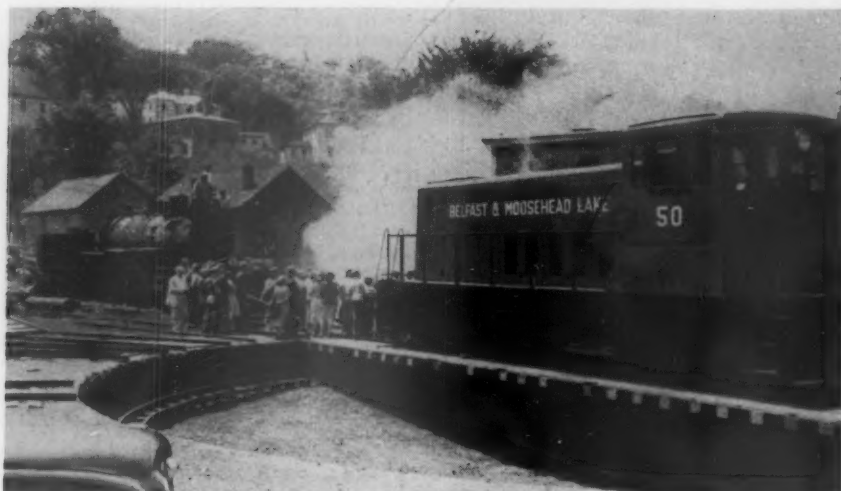
Speno equipment, working under traffic without interference with railroad operation, (the track adjacent to the one being worked is not fouled by our equipment in working position) easily keeps ahead of track raising programs.

The high production and low cost of this service are worthy of consideration.

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"BURNING THE MORTGAGE" as the Belfast & Moosehead Lake recently completed payment, two and one-half years ahead of time, for two 70-ton, 600-hp. General Electric-Cooper-Bessemer Diesel-electric locomotives. Participants in the ceremony included Clarence A. Paul, president of the B. & M. L.; past presidents of the road; city officials of Belfast, Me.; representatives of the General Electric Company, the

Cooper-Bessemer Corporation, the First National Bank of Boston, Mass., the Maine Central and the Bangor & Aroostook—and, as a silent spectator, the partially demolished remains of one of the road's old steam locomotives, which the Diesels replaced. A summary of the results of Diesel operation on the B. & M. L. was given in the *Railway Age* of August 19, page 20

mail and express service, by cooperating with the citizens of various towns and communities and by arranging schedules to meet the convenience of the people.

"We believe we can secure mail and express contracts that have been diverted to highway transportation because of abolition of rail service."

Superintendents Vote For "Effective Advertising"

The executive council of the American Association of Railroad Superintendents, at a meeting in Chicago on September 11, endorsed a resolution written and passed at the association's annual Pacific Coast post-convention meeting advocating that the Association of American Railroads, "by the use of the most effective advertising known to the advertising business," seek to alleviate the present inequality of opportunity among transportation agencies. The resolution, recognizing that this inequality of opportunity is largely due to factors controlled by public opinion, seeks more effective public and employee education in the importance of this matter.

Federal-Aid Highway Act Signed by President

President Truman on September 7 signed the recently-enacted federal-aid highway act which authorizes appropriations of \$500,000,000 for each of the fiscal years ended June 30, 1952, and June 30, 1953, for the so-called regular road program. Each year's half-billion dollars includes \$225,000,000 for the federal-aid "primary" system, \$150,000,000 for "secondary"

roads, and \$125,000,000 for highway projects in urban areas.

The act also carried authorizations for other road building, including work on forest roads, national parkways, and highway projects certified by the secretary of commerce as necessary for defense. While the act was on its way through Congress, the Senate voted down a proposed amendment which would have denied federal aid to states which permitted trucks carrying more than 18,000 lb. gross weight per axle to operate over federal-aid roads.

This authorization act does not provide funds for the contemplated expenditures involved. The money will not be available until it is appropriated in appropriation acts for the fiscal years covered.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

24,280 Freight Cars Ordered In August; 5,203 Delivered

Freight-train cars ordered last month for domestic use totaled 24,280, including 9,039 ordered from railroad shops, compared with July orders for 30,065 cars, which included 10,575 ordered from railroad shops, the American Railway Car Institute has announced. Freight-train cars delivered

in August numbered 5,023, including 2,416 delivered by railroad shops, compared with July deliveries of 3,464, which included 1,326 delivered by railroad shops. August deliveries included 2,324 box cars, 1,196 hopper cars, 935 gondola cars, 272 stock cars, 266 refrigerator cars, 204 tank cars and 6 cars of other types.

Steel is still in short supply, according to the institute, and no substantial increase in monthly deliveries can be expected until several months after establishment of the proposed voluntary allocation program under new defense legislation. The backlog of cars on order on September 1, the institute said, was 86,156, including 32,471 on order with railroad shops, compared with 67,084 cars on order on August 1 and 28,731 on order on September 1, 1949.

The Chicago & Eastern Illinois has 25 flat cars on order from the Thrall Car Company.

The Missouri-Kansas-Texas has ordered 500 50-ton box cars from the Pressed Steel Car Company.

The New York Central System has ordered 1,000 55-ton 40½-ft. box cars at an estimated cost of \$5,000,000 and has announced plans to recondition 3,000 gondola cars at an estimated cost of \$5,400,000. The order for box cars is in addition to the order for 6,001 cars of various types reported in *Railway Age* of August 5, page 73. It brings the Central's postwar orders for freight cars to 42,673 units at a total estimated cost of \$190,500,000.

The Southern Pacific has ordered 1,600 50-ton box cars from the Pullman-Standard Car Manufacturing Company. These cars are part of the 5,000 recently authorized to be purchased or constructed, as reported in *Railway Age* of August 26, page 61.

The Western Pacific will place an "immediate" order for 500 50-ton wood-lined steel box cars.

PASSENGER CARS

The Atlantic Coast Line has purchased six lightweight coaches from the Budd Company and four lightweight 6-double-bedroom-10-roomette sleeping cars from the Pullman-Standard Car Manufacturing Company. The cars, costing about \$1,125,000, were built on orders from the Chesapeake & Ohio subsequently taken over by the Coast Line. They are expected to be placed in service in the near future.

IRON & STEEL

The Delaware & Hudson has ordered 1,232 net tons of rail from the Bethlehem Steel Company.

The Lehigh & New England has ordered 1,373 gross tons of rail from the Bethlehem Steel Company.

The Richmond, Fredericksburg & Potomac has ordered 7,750 net tons of rail from the Bethlehem Steel Company.

The Western Pacific has received approval for purchase of 76 track mi. of new rail.

MARINE

The Central of New Jersey has ordered one 2-track and two 3-track car floats from the Bethlehem-Staten Island Yard, Staten Island, N. Y.

CAR SERVICE

I.C.C. Acts to Speed Freight Car Movements

Raises demurrage charges and prescribes operating rules

Service orders imposing increased demurrage charges running up to \$20 per day, prescribing railroad operating regulations for the movement of freight cars, and restricting the use of trap and ferry cars were issued this week by Division 3 of the Interstate Commerce Commission. As this issue went to press, the demurrage and operating rules orders—No. 865 and No. 866, respectively—were scheduled to become effective at 7 a.m., September 20, that date having been fixed by amendments which changed the September 15 of the original orders. The order relating to trap and ferry cars, No. 867, was also scheduled to become effective September 20, but at 11:59 a.m. The latter's expiration date is 11:59 p.m. March 31, 1951, while the other two orders have the same expiration date—7:00 a.m. April 1, 1951.

The orders were issued on September 12. That was the day after the commission, as noted elsewhere in this issue, designated James K. Knudson as the commissioner to whom its Bureau of Service reports, thus making Mr. Knudson the administrator of those provisions of the Defense Production Act which authorize the establishment of priorities and allocations with respect to domestic rail, highway, and inland-waterway transportation.

Service Order No. 865 imposes on freight cars, not subject to an average agreement, demurrage charges of \$5 per car per day or fraction thereof for the first and second days after the expiration of free time; \$10 per day or fraction thereof for the third and fourth days; and \$20 per day for each succeeding day or fraction thereof. As (Continued on page 91)



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ON Cap Screws

Locomotive builders and railroad maintenance men know that modern "iron horses" are only as good as the fasteners that hold them together. That's why the "bolts" of yesterday have been replaced by modern, super-tough Lamson "1020" heat-treated Cap Screws. They're the fasteners that can handle the toughest holding jobs.

So remember this when you order Cap Screws. And remember, too, that Lamson "1020" heat-treated Cap Screws are the equal of original equipment in every respect. Lamson "1035", with 150,000 p.s.i. minimum tensile strength, offer you EXTRA holding power where required. They are the *ultimate* in high quality Cap Screws.



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for safety**



Here are some suggestions . . .

The Punch-Lok Method is now the standard practice for all shop-hose clamping by the nation's leading railroads. Many railroads have assigned standard stockbook reference numbers to Punch-Lok clamps, fittings and tools.

Diesel locomotive builders use Punch-Lok clamps on original equipment. Railroad Diesel repair shops find Punch-Lok clamps the solution on overhaul repair work on pneumatic control hose for panel, starter, and shutters.

The use of Punch-Lok clamps is permitted by A.A.R. for train line hose on cars in interchange service.

Today Punch-Lok clamps are used extensively for holding the insulation on pressure lubricating lines, steam lines, etc. They make a better job and are easy to apply.

For dozens of miscellaneous service and repair jobs, both in the shops and on rolling stock—it's Punch-Lok clamps.

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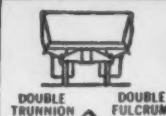
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Cars: to be reconditioned and rebuilt.

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DOUBLE TRUNNION



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**RAIL CARS
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PATENT PENDING

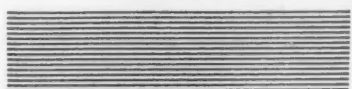
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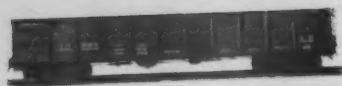
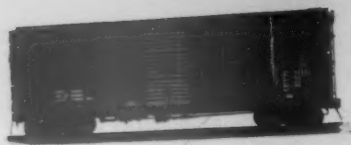


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CAR MILES TC
3 TON MI
MILES CAR M
MILES



CAR MILES
— **VS** —
TON MILES



a.c.f.

A busy freight car covers many miles in a year.
But car-miles, although they reflect on a car's
dependability, do not necessarily mean profitable operation.
It's the ton-mile side of the ledger that can make the
difference between profit and loss.

With transport competition on the rise, the nation's
Railroads face the stern need for holding, re-capturing and
seeking new freight tonnage. One important way to
accomplish these aims is through a long range
program of regular freight car replacements to
complement the speed, economy of operation and
improved rail service afforded by new, powerful motive
power units. The resultant efficiency can be made a
sure way to win customers and influence shippers.

The Advantage of Buying Over Building

No Railroad can justify the investment necessary to
duplicate Q.C.F. car-building facilities. It's a costly step
from normal maintenance operations to new car building
on a large scale, and there are other advantages
to be considered.

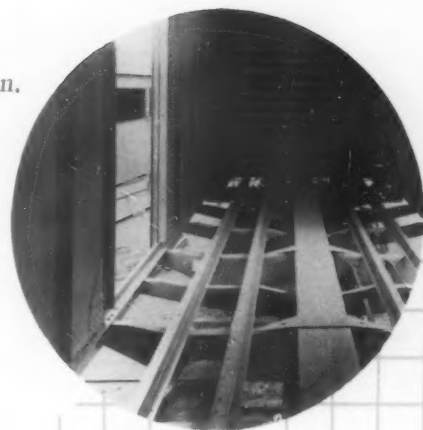
Q.C.F. facts on Freight Cars

- Standardized design for lower maintenance costs
- Assembly-line fabrication
- All-welded construction for rugged quality
- Dimensional accuracy for guaranteed interchangeability
- Operating dependability for profitable life service
- Production speed for quick delivery
- Plant facilities strategically located

Discuss your needs with an Q.C.F. representative.
A practical, long-range purchase plan is available to
facilitate your program of regular freight car replacements.

CAR BUILDERS TO AMERICA'S RAILROADS

American Car and Foundry Company, New York •
Chicago • St. Louis • Cleveland • Philadelphia •
Washington • Pittsburgh • San Francisco





"I wasn't asleep," said the Dormouse

EVERY boy and girl knows the drowsy Dormouse of Alice in Wonderland. He was elbowed and pinched by the Mad Hatter and the March Hare as he mumbled in his sleep at the tea party.

But our young people aren't so well versed in everyday economics. They have a sadly distorted picture of the profits of business. They don't realize why profits are necessary, how small they are, or how they are divided.

For instance, in a recent survey of high school seniors, it was discovered that they believe over 50% of the sales dollar is profit and they think stockholders receive 24% of it. Actually business profit averages less than 8%, with less than 3%

distributed as dividends. Business uses most of its profit, moderate as it is, for new plant and equipment, to improve products and to make more jobs.

Misconceptions among our youth bode ill for America's future. They open the door for too ready acceptance of dangerous isms and false foreign philosophies. Such misunderstanding of economics can be corrected only with facts supplied by business itself. You as a leader in your community must share this responsibility.

The American business man must not allow himself to be cast in the role of the Dormouse, pinched and pilloried by the March Hares of communism and the Mad Hatters of the "everything for nothing" state.



The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio

Export Offices--500 Fifth Avenue, New York

MANUFACTURERS OF CARBON, ALLOY AND YOLOY STEELS

ELECTROLYTIC TIN PLATE - COKE TIN PLATE - WIRE - COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - CONDUIT - RODS - SHEETS - PLATES - BARS - RAILROAD TRACK SPIKES.

(Continued from page 85)

to cars subject to average agreements, the order imposes the same charges and prescribes this rule for offsetting: "Each \$5 debit day charge shall be offset or reduced by accrued credits only at the ratio of two credits for one debit, an odd credit to be disregarded. Charges at rates in excess of \$5 per day shall not be offset or reduced by accrued credits."

The order also has a provision relating to so-called "bunching of cars." It suspends tariff rules which prohibit the cancellation or refunding of demurrage charges on cars "bunched" for unloading, but restricts the application of "bunching" rules. Such rules will be applicable "to the extent that the allowances provided therein shall be made only on cars originating at the same point, moving via the same route, and consigned to one consignee at one point, which are tendered for delivery in accumulated numbers in excess of the daily rate of shipment, provided written claim is filed in accordance with the provisions [of the applicable rule]; however, allowance shall be made only on cars accruing charges at rates in excess of \$5 per car per day."

The order applies generally to all freight cars subject to published demurrage rules and charges on file with the I.C.C. or state commissions. There is, however, an exception which exempts "export, coastwise, or inter-coastal bulk freight (including coal, coke, and vessel fuel) during the period such bulk freight is held at cars at ports (including Great Lakes) for transfer to vessels. . ."

Also, it is provided that the order shall not change demurrage rules relating to adjusting, canceling, or refunding demurrage charges arising from "unusual conditions or circumstances." When the order was issued, the demurrage charges were \$3 per car per day for the first four days after the expiration of free time, and \$6 per car per day thereafter.

The order was based on a commission finding that there existed an "emergency requiring immediate action to promote the national defense and car service in the interest of the public and commerce of the people." A like finding was set out in each of the other two orders.

The railroad operating rules written into Service Order No. 866 are those now contained in Appendix C to the railroads: Code of Car Service Rules. In addition the commission has required prompt sending of arrival notices; and it has made Arthur H. Gass, chairman of the Car Service Division, A.A.R., its agent with authority to issue "such orders as may be necessary with respect to the location, relocation and distribution of freight cars."

The operating rules prescribed in the order require the railroads to:

- (1) Place or constructively place all inbound loaded cars within 24 hours after the first 7:00 a.m. following arrival at destination station or serving yard, Sundays and holidays excepted.
- (2) Remove empty cars after release from load

within 24 hours after the first 7:00 a.m. following release, Sundays and holidays excepted, unless such cars are ordered or appropriated within such 24-hour period by the shipper for reloading.

- (3) Remove all outbound loaded freight cars within 24 hours after the first 7:00 a.m. following tender and acceptance by carrier of the shipping order or bill of lading covering the cars, and forward within 24 hours after the first 7:00 a.m. following receipt in terminal, Sundays and holidays excepted.

Exempt from the foregoing are: Non-revenue cars in company-material service; railroad fuel; company material, the unloading of which must await preparation of track or bridge structures requiring special work train service; cars released on lines where less than daily service is provided, or at outlying stations where switching service is not performed on Saturdays; privately owned or leased cars held or stored on private tracks when the ownership of the cars and the tracks is the same; cars held for export, coastwise (including Great Lakes) or intercoastal shipment; and cars held for reconsignment, customs inspection, order notify bills of lading, or causes beyond the control of the railroad.

Another rule of the order restricts the holding of cars for prospective loading, stipulating that, "with due regard for efficient railroad operating practices," no road shall hold more cars for prospective loading for any industry which it serves than those needed to protect "current outbound loading." Where an industry is served by more than one road, each such road must "arrange to prevent the aggregate holding of empty cars in excess of the industry's current needs." Exempt from this rule are "cars assembled for peak or seasonal movements and special types of cars for specific types of loading."

As to the repair-truck operations, the order requires that, "weather conditions permitting," all cars taken out of service for repairs, or carded for repairs, be repaired "at the earliest time consistent with efficient railroad operating practices." Then come the rules, mentioned above, which require the prompt sending of arrival notices and make C.S.D. Chairman Gass a commission agent for the issuance of car distribution orders. The former stipulates that notice of arrival or constructive placement must be sent or given "within 24 hours, Sundays and holidays excepted, after arrival of car and billing at destination." A final rule requires that the railroads "make the necessary yard and track checks and maintain sufficient supervision and records to comply with the provisions of this order."

In restricting the use of trap and ferry cars, Service Order No. 867 provides generally that "no railroad . . . shall provide, use or permit the use of a trap car or a ferry car between points in the same municipality or between contiguous municipalities or within a zone adjacent to or a part of any such municipality or municipalities. . ." A trap or ferry car is defined as "any railroad car utilized for intra-terminal or so-called crosstown switching irre-

spective of whether the freight is moving at L.C.I. rates, at per car rates or carload rates based on carload minimum specified in tariffs."

The order's exemption provisions permit ferry-car operations to continue in the following situations:

- (1) Where cars involved are not suitable for interchange.
- (2) Where there is no other common carrier capable of transporting the shipments.
- (3) Where necessary to relieve congestion of carriers' freight-house facilities because of inability to obtain transportation of the shipment by motor vehicle.
- (4) Where motor vehicles are, not available with which to move the shipment.
- (5) Where the carriers' freight-house or transfer facilities or consignor's or consignee's facilities are so located or constructed as to make it impracticable to transport the shipment by motor vehicles.
- (6) Where the cars involved contain perishables or explosives and dangerous articles.
- (7) Where a pick-up or concentration car is operated between points which, "from previous experience or actual present knowledge," will arrive at destination with a net load of at least 10 tons.
- (8) Where shipments involved are of the kind described in Section 2 of Rule 27 of the Consolidated Freight Classification, i.e., heavy, bulky, and unwieldy articles.

There is also a permit provision authorizing exemptions on the basis of special or general permits issued by the director of the commission's Bureau of Service, Homer C. King.

SUPPLY TRADE

W. C. Harris has been appointed manager of engineering of the locomotive and car equipment divisions of the General Electric Company's apparatus department to succeed H. W. Gouldthorpe, recently appointed manager of the transportation divisions in Schenectady, N. Y. R. A. Hutchins has been appointed to the newly created post of assistant to the manager of the locomotive and car equipment divisions.



W. C. Harris

Mr. Harris joined G. E. in 1911 on its test engineering program soon after graduating from Virginia Polytechnic Institute with a degree in electric engineering. Later he was assigned to the railway engineering division and in 1917 was commissioned a first lieutenant.

C-O-TWO ANNOUNCES

Underwriters' Laboratories, Inc. Listed

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FIRE PROTECTION**
from a single storage tank

C-O-TWO now adds another outstanding contribution to modern fire fighting . . . *C-O-TWO Low Pressure Carbon Dioxide Type Fire Extinguishing Systems*. Carbon dioxide stored in bulk under low pressure, means greater fire protection for your larger size fire hazards at less cost.

Flexibility is the keynote of these new type C-O-TWO Fire Extinguishing Systems . . . the low pressure carbon dioxide storage tanks range in capacities from one to fifty tons, and can be operated as straight manual, partially automatic or fully automatic systems.

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Let an experienced C-O-TWO Fire Protection Engineer help you in planning up-to-date, fully approved fire protection now before fire strikes. Complete free information and descriptive literature available on request. Get the facts today!

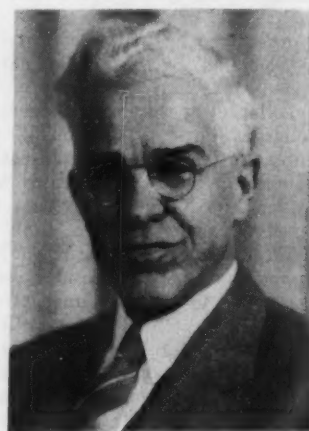
C-O-TWO FIRE EQUIPMENT COMPANY

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Sales and Service in the Principal Cities of United States and Canada

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ant to serve overseas during World War I. In 1925 he transferred to G.E.'s railway traction division, and two years later was appointed assistant engineer of the automotive engineering division. In 1930 Mr. Harris moved to Erie, Pa., and was named engineer of the automotive engineering division. Five years later he became assistant to



R. A. Hutchins

the Erie works manager and in 1945 he was made Erie works engineer. He later became designing engineer for the locomotive and car equipment divisions.

Mr. Hutchins, born in Wyoming, Pa., came to G.E. from Pratt Institute in 1909 as a student on the test engineering program. He joined the railway motor engineering division in 1911 and in 1926 was transferred to Erie. Later he traveled throughout Argentina, Brazil, and Uruguay for the international General Electric Company. In 1932 he was appointed section head in the railway motor engineering division.

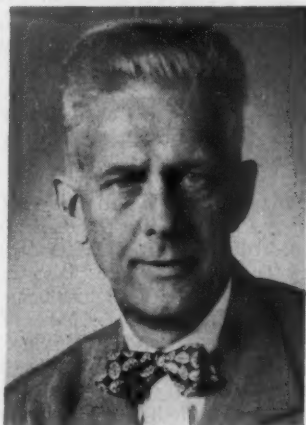
Fred E. Peacock has been appointed technical sales and service manager of the **National Pneumatic**



C. Allen Koenig

Company, with headquarters at the company's Boston, Mass., plant. He is succeeded as eastern sales manager by **C. Allen Koenig**, with offices in

the Graybar building, New York. Mr. Peacock, who joined the firm shortly after World War I, was eastern sales



Fred E. Peacock

manager for five years. In his new position he will coordinate activities of the sales and service divisions. For the past 10 years Mr. Koenig has been manager of railroad sales.

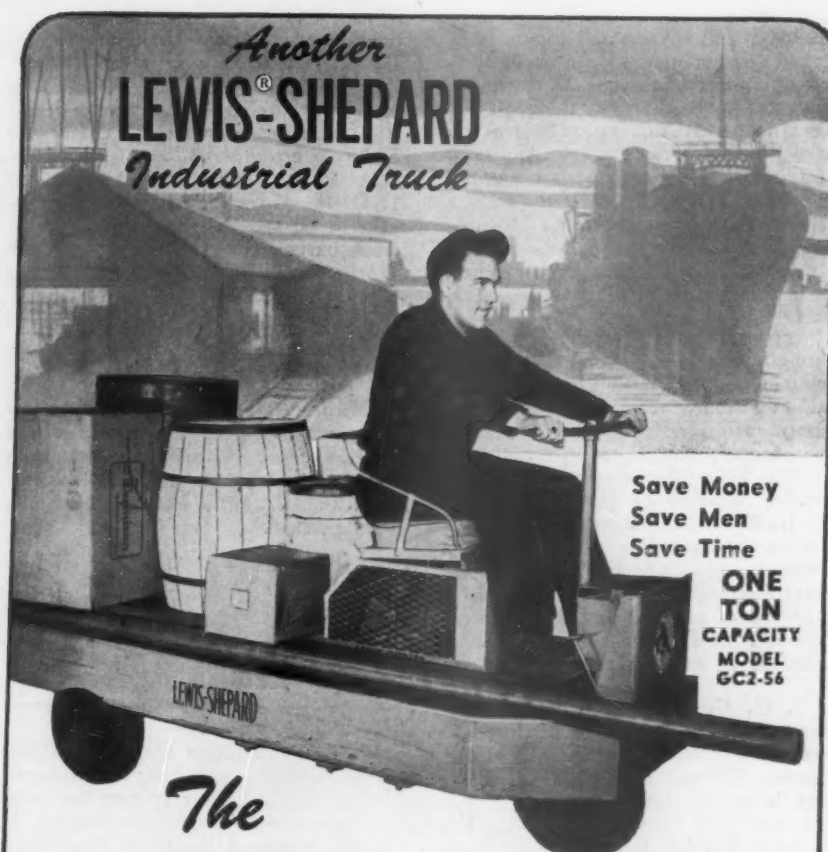
Hynes Sparks has been elected president of the Symington-Gould Corporation, effective October 1, to succeed Peter F. Rossmann, who has resigned to accept an executive position with the Hupp Corporation.

Mr. Sparks, elected vice-president of Symington-Gould in March, 1942, will continue in charge of general sales policies and will make his headquarters in the New York office. He joined the firm in its Rochester, N. Y., plant shortly after his discharge from the



Hynes Sparks

Army in 1919 and was transferred to the New York sales office in January, 1920. He was appointed manager, eastern sales, in 1938, which position he held until his election as vice-president. Mr. Sparks was elected a director and a member of the policy committee at the annual stockholders' meeting in 1946. During World War II he was principal industrial specialist in the forgings and castings section of the steel division, War Production Board.



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Save Men
Save Time

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- Electric starting. No cranking, therefore operator will stop engine while loading truck. Saves fuel and reduces fumes.
- 3 speeds forward — 1 reverse. Saves strain on engine. Increases grade performance with heavy loads. Lowers maintenance cost.
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- Water cooled engine — quiet and cooler.
- Hydraulic brakes — airplane type.
- Double handle grip provides one or two hand steering.
- When operator leaves seat, parking brake is mechanically applied.



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Lloyd H. Angstadt has been named director of the Institute of Records Administration and Management Controls to be opened this fall by **Remington Rand, Inc.** Before his present appointment Mr. Angstadt, who joined the company last December, was a special assistant to the general sales manager of the business machines and services division. The institute is scheduled to open its first customer seminar within a few weeks.

Arnold Rosenberg has been appointed general sales manager of the communications division of the Bendix radio division of the **Bendix Aviation Corporation.** He succeeds **J. W. Hammond**, who has been transferred to the Friez instrument division of Bendix Aviation as director of sales. **R. B. Moon** has been appointed assistant general sales manager of the communications division, and **R. B. Barnhill** succeeds Mr. Moon as sales manager of railroad and mobile products. **R. L. Daniel** will continue as manager of aviation radio sales.

J. G. Graham, who has for the past several years been with the Railroad Locomotive division of **Fairbanks, Morse & Co.** at Chicago, has been appointed eastern regional manager of locomotive sales. Mr. Graham will be located at New York, where he will have jurisdiction over sales of locomotives in the New York,

Southeastern and Cleveland areas. **D. C. Prescott**, a representative of the locomotive sales staff in the Chicago district, has been appointed district manager—locomotive sales of the Southwestern district, and will be located in St. Louis, Mo., after October 1. **C. H. Morse, Jr.**, assistant manager of Diesel locomotive service, with headquarters at the Beloit (Wis.) Works, has been appointed district manager—locomotive sales, with headquarters at Chicago, and jurisdiction over the Chicago and St. Paul-Minneapolis areas.

Maurice N. Trainer, formerly first vice-president of the **American Brake Shoe Company**, has been elected president to succeed William B. Given, Jr., who becomes chairman of the board.

FINANCIAL

New York, New Haven & Hartford.—Purchase of B.&P. Debentures.

—The I.C.C. has postponed the joint hearing scheduled for September 12 in the reopened Boston & Providence reorganization case and the related proceeding in which the New Haven

seeks authority to purchase a claim against the estate of the B.&P. based upon \$2,170,000 of matured 5 per cent debentures. The commission reassigned the hearing for October 17, in Washington, D. C., before Examiner Harvey H. Wilkinson. (See *Railway Age* of July 22, page 59.) The commission's action was taken following the New Haven's request for a postponement.

Pennsylvania-Wabash. — *Control of D.T.&I.*—Acting in response to a request of the United States District Court for the Northern District of Ohio, to which the case has been appealed, the I.C.C. has postponed from September 23 to October 23 the effective date of its order authorizing these roads to acquire control of the Detroit, Toledo & Ironton. The New York Central, Baltimore & Ohio, and New York, Chicago & St. Louis oppose the acquisition as approved by the commission. (See *Railway Age* of August 19, page 56).

Western Pacific. — *Refinancing Plan.*—This company's directors have approved a general plan for refinancing. The plan calls for issuance of \$22 million of 3 per cent first mortgage bonds which would be used to retire the existing \$10 million of 4 per cent first mortgage bonds and \$6.133 million of 4½ per cent general mortgage income bonds. The balance of the proposed issue would provide additional money for further improvements to the property. Approval of the new mortgage must be obtained from a two-thirds majority of preferred stockholders, according to the road's articles of incorporation, after which the proposal will be submitted to the I.C.C. for its approval.

New Securities

Division 4 of the I.C.C. has authorized:

KANSAS CITY SOUTHERN.—To assume liability for \$2,700,000 of series K equipment trust certificates to finance in part 26 Diesel-electric locomotives costing an estimated \$3,346,680. (See *Railway Age* of August 12, page 82.) The certificates, to be dated September 1, will mature in 15 annual installments of \$180,000 each, beginning September 1, 1951. Division 4's report approved a selling price of 100.5699 with interest at 2½ per cent—the bid of Harris, Hall & Co. and four associates—which will make the average annual cost of the proceeds approximately 2.43 per cent. The certificates were reoffered to the public at prices yielding from 1.5 to 2.6 per cent, according to maturity.

Security Price Averages

	Sept. 12	Last week	Last year
Average price of 20 representative railway stocks.	48.19	45.98	38.40
Average price of 20 representative railway bonds.	95.91	95.37	85.72

Dividends Declared

Dover & Rockaway.—\$3, semiannual, payable October 2 to holders of record September 30.
European & North American.—\$2.50, semiannual, payable October 3 to holders of record September 9.
Seaboard Air Line.—75c, payable September 28 to holders of record September 18.
Southern (Mobile & Ohio stock trust certificates).—\$2, semiannual, payable October 1 to holders of record September 15.

Complete loudspeaker paging and two-way communicating systems for classification yards, terminal facilities, mail and baggage handling facilities, passenger stations, freight stations, engine houses, interlocking towers, car checking service, and for Dispatcher's and other low level telephone type line applications.

- Control consoles
 - Direct two-way communicating equipment
 - Low level line two-way communicating equipment
 - Intercommunicating systems
 - Paging systems
- Portable sound systems
 - Pre-amplifiers
 - Power amplifiers
 - Way station amplifiers
 - Dispatcher's transmitter and receiver units
- Telephone line concentration units
 - Telephone line monitoring units
 - Remotely controlled systems
 - Automatic volume level compensating units
 - Time and emergency signal devices
- Microphones
 - Loudspeakers
 - Weatherproof control units
 - Switch and jack box assemblies
 - Equipment cabinets
- Power supply units
 - Relays—switches—transformers
 - Speech frequency band-pass filters
 - Wire—cable
 - Control equipment for special applications
 - Portable tape recorders

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RAILWAY OFFICERS

EXECUTIVE

B. R. Harris, general industrial agent of the CHICAGO GREAT WESTERN, has been appointed assistant to the president in charge of industrial development, with headquarters at Chicago.

FINANCIAL, LEGAL & ACCOUNTING

Leo J. Gosney, general auditor of the WESTERN PACIFIC, has been elected also comptroller, with headquarters remaining at San Francisco, Cal.

OPERATING

A. E. Highland has been appointed assistant to manager of the Military Transportation Section, Car Service Division, ASSOCIATION OF AMERICAN RAILROADS. This position has been restored due to increased activity in the section incident to the Korean war and the increased mobilization of the United States armed forces.

E. C. Ackerman, assistant division superintendent of the CHICAGO, BURLINGTON & QUINCY, at Omaha, Neb., has been appointed acting assistant to general manager, Lines East of the Missouri river, with headquarters at Chicago, succeeding **R. L. Clayton**, who is off duty on account of illness.

TRAFFIC

LeRoy C. Howe, general freight agent of three affiliated roads of the NEW YORK CENTRAL SYSTEM, the INDIANA HARBOR BELT, the CHICAGO RIVER & INDIANA and the CHICAGO JUNCTION, with headquarters at Chicago, has been appointed assistant freight traffic manager of the N.Y.C. at St. Louis, Mo. He succeeds **J. L. Meehan**, transferred to Detroit, Mich., as reported by *Railway Age* on July 8. **M. L. Seger**, division freight agent at Chicago, becomes Mr. Howe's successor, and is in turn succeeded by **R. L. Milbourne**. **J. C. Malone**, general agent at Davenport, Iowa, has been appointed general agent, freight department, at Chicago.

Mr. Howe was born on August 11, 1892, in Aurora, Ill., and received his higher education at Northwestern and LaSalle Extension Universities. He began his career with the Central in 1911 as a stenographer in the office of the freight traffic manager at Chicago, serving there and in the office of the traffic manager until World War I, when he entered military service. He later held various secretarial and clerical positions, and in 1929 became general agent at Toledo, Ohio. In 1932 he was transferred to Kankakee, Ill., as division freight agent, and in 1933 was appointed to the same position at

Chicago. He became general freight agent at that point in 1948.

Mr. Seger entered service with the Central in March, 1918, at Chicago as a mail clerk. Subsequently he held various positions, and in September, 1939, was appointed chief clerk for the system vice-president—freight traffic, being advanced to division freight agent in September, 1948.

MECHANICAL

F. B. Rykoskey, system supervisor of shops of the BALTIMORE & OHIO at Baltimore, Md., has been promoted to superintendent of motive power of the

Central region at Pittsburgh, Pa., succeeding **Harry Rees**, who has been granted leave of absence because of ill health. **Guy F. Miles**, supervisor of Diesel-electric locomotive operation for the system, has been promoted to assistant to the general superintendent of motive power and equipment, with headquarters as before at Baltimore. **J. J. Ekin, Jr.**, supervisor of lubrication at Baltimore, replaces Mr. Rykoskey as supervisor of shops. **L. L. Robinson, Jr.**, regional motive power inspector at Baltimore, has been promoted to general supervisor of locomotive maintenance, to succeed **E. A. Campney**, promoted to super-

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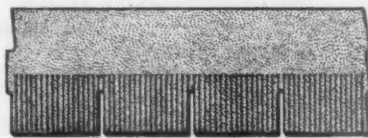
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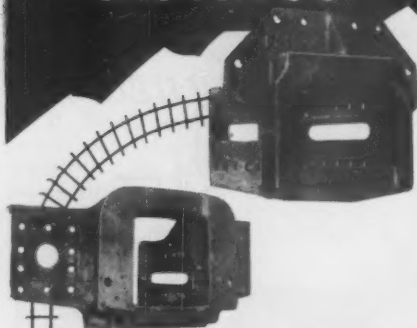
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- and many others.



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visor of lubrication. **W. C. Brown**, Diesel foreman at Riverside shops, Baltimore, has been promoted to regional Diesel supervisor, replacing **J. D. Cavey**, appointed regional motive power inspector. **A. M. Lewis**, superintendent of shops at DuBois, Pa., has been promoted to master mechanic at Willard, Ohio. **W. F. Dadd**, regional Diesel supervisor for the Western region at Cincinnati, Ohio, has been promoted to master mechanic at Punxsutawney, Pa., succeeding **L. R. Haase**, who has been appointed superintendent of shops at DuBois. **O. M. Dorsey**, Diesel foreman at Cone Yard, East St. Louis, Ill., has been promoted to regional Diesel supervisor at Cincinnati.

Mr. Rykoskey joined the B. & O. in 1920 as apprentice machinist. He became supervisor of shops for the system at Baltimore in 1944.

ENGINEERING & SIGNALING

S. H. Shepley, assistant chief engineer of the ELGIN, JOLIET & EASTERN, at Joliet, Ill., has been assigned to rearrangement of yard facilities at Gary, Ind., of which project he will be in direct charge, with headquarters at Gary. While on this assignment, Mr. Shepley's former duties and responsibilities in the maintenance of way department will be assumed by **A. C. Hoyt**, engineer bridges and buildings at Joliet, who becomes engineer maintenance of way at that point. **A. C. Johnson**, engineer of design, at East Joliet, Ill., assumes Mr. Hoyt's duties as engineer bridges and buildings.

C. G. Davis, division engineer of the KANSAS CITY SOUTHERN LINES, has been promoted to assistant chief engineer, with headquarters as before at Kansas City, Mo.

SPECIAL

Dwight W. Norris, manager of public relations of the NEW YORK, NEW HAVEN & HARTFORD at New York, and **Leslie H. Tyler**, public relations representative at New Haven, Conn., have been appointed assistant directors of publicity for New York and Connecticut, respectively. Mr. Norris is the New Haven's representative on the New York mayor's defense committee and Mr. Tyler is editor of the road's employee publication.

OBITUARY

E. Wilbur Reich, 56, assistant to the president of the READING at Philadelphia, Pa., died of a heart attack on September 8 at his home in Jenkintown, Pa.

R. W. Willis, who retired as assistant chief engineer of the CHICAGO, BURLINGTON & QUINCY, at Chicago, in October, 1947, died on September 1 at Hinsdale, Ill.

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Over 98% of the Cars in Freight Carrying Service are A. A. R. Construction, and Over 96% have Friction Draft Gears.

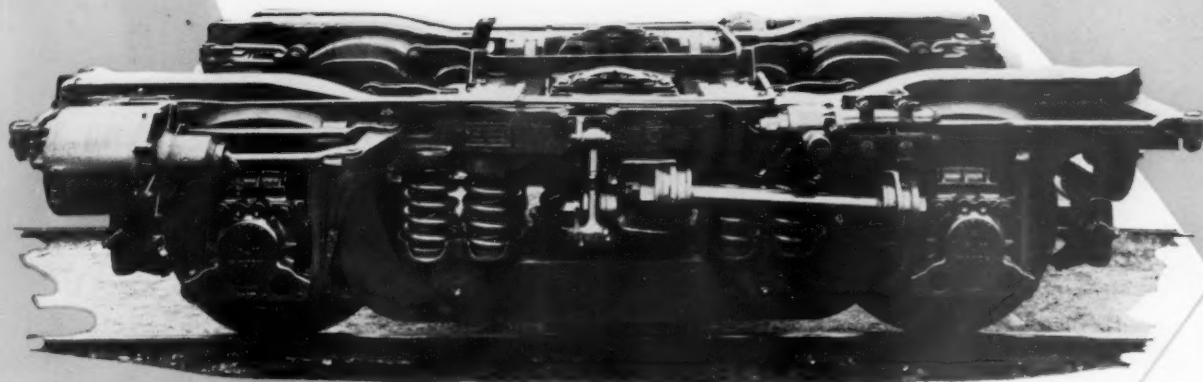
Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1950

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net railway operating income
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equip-ment	Traffic		
Akron, Canton & Youngstown.....	July	408,994	87	422,928	63,155	40,033	28,188	138,381	86,300
.....	7 mos.	2,705,287	529	2,790,981	425,683	283,352	203,938	889,549	332,628
Acheson, Topeka & Santa Fe System.....	July	39,939,724	4,784,801	48,547,657	6,196,359	9,666,652	920,019	14,013,936	10,416,025
.....	7 mos.	22,370,088	2,241,526	26,780,671	40,313,145	48,989,765	6,799,048	86,633,610	34,100,041
Atlanta & St. Andrews Bay.....	July	232,671	2,108	241,651	34,456	3,456	6,370	116,534	16,294
.....	7 mos.	1,634,985	8,843	1,687,963	224,942	129,988	50,148	357,723	347,428
Atlanta & West Point.....	July	236,162	53,310	327,097	36,817	50,159	13,039	167,786	24,254
.....	7 mos.	1,762,325	327,917	2,090,242	260,399	339,894	95,819	1,063,581	376,357
Western of Alabama.....	July	250,552	50,957	301,509	37,819	50,957	10,438	49,793	7,631
.....	7 mos.	1,709,610	268,495	2,284,481	326,443	398,683	96,973	1,307,117	120,614
Atlantic & Danville.....	July	101,310	.....	102,641	31,007	.....	8,113	33,370	3,246
.....	7 mos.	757,144	.....	769,242	167,924	55,540	53,552	247,976	34,577
Atlantic Coast Line.....	July	7,363,339	1,255,302	9,275,248	1,963,335	1,841,422	287,226	3,846,807	700,000
.....	7 mos.	59,813,140	10,274,911	75,859,763	13,481,417	12,657,621	2,044,534	29,620,829	84,338,365
Charleston & Western Carolina.....	July	362,780	2,111	373,297	82,839	15,161	19,479	315,925	57,282
.....	7 mos.	2,773,293	14,760	2,848,223	529,765	409,483	177,116	1,106,919	622,714
Baltimore & Ohio.....	July	28,960,882	2,051,816	32,699,381	4,202,678	6,516,157	736,453	13,341,720	6,566,912
.....	7 mos.	193,513,938	12,254,700	217,708,280	26,921,603	46,096,063	5,386,615	89,777,601	17,227,251
Staten Island Rapid Transit.....	July	166,436	54,652	224,886	42,776	36,422	1,641	124,645	227,731
.....	7 mos.	1,224,341	341,765	1,591,308	288,727	262,237	10,770	868,392	1,585,570
Bangor & Arcootook.....	July	548,944	35,639	620,735	182,121	134,851	12,805	198,127	573,037
.....	7 mos.	7,639,724	206,078	8,091,967	1,772,572	1,181,297	94,525	1,906,159	4,793,302
Besemer & Lake Erie.....	July	2,850,242	1,355	2,871,303	176,720	850,986	15,726	1,016,342	1,658,110
.....	7 mos.	12,223,698	6,123	12,361,264	1,179,098	4,216,686	110,767	2,831,166	8,946,319
Boston & Maine.....	July	5,194,359	1,185,155	6,985,320	1,213,786	906,963	101,265	2,834,753	5,341,443
.....	7 mos.	36,470,490	6,607,189	47,294,510	7,976,622	7,170,530	746,978	20,159,510	38,147,756
Camden & Indiana.....	July	10,646	.....	110,684	16,019	75,334	658	132,385	137,7
.....	7 mos.	233,208	47,552	768,791	97,074	541,987	5,893	1,153,243	42,119
Canadian Pacific Lines in Maine.....	July	2,864,418	265,328	3,295,738	663,858	507,418	44,727	1,320,633	2,615,207
.....	7 mos.	17,223,698	1,355	17,223,698	1,179,098	4,216,686	110,767	2,831,166	8,946,319
Canadian Pacific Lines in Vermont.....	July	174,223	10,105	191,500	50,216	17,283	5,759	111,166	191,186
.....	7 mos.	1,071,008	82,081	1,267,804	399,823	168,547	36,296	741,462	1,392,964
Central of Georgia.....	July	2,502,113	227,715	2,919,298	542,807	491,036	110,550	1,443,069	2,764,295
.....	7 mos.	18,211,487	1,457,479	21,277,150	3,620,445	3,552,475	781,625	9,840,224	18,987,068
Central of New Jersey.....	July	2,573,130	567,551	3,311,908	503,413	524,603	50,188	1,620,347	2,835,777
.....	7 mos.	16,963,275	3,385,627	21,615,527	3,189,514	3,639,993	370,404	11,045,090	19,343,718
Central of Pennsylvania.....	July	1,596,237	11,660	1,636,497	152,835	307,596	21,671	461,832	980,479
.....	7 mos.	10,540,987	64,233	10,827,708	1,999,362	2,268,849	164,757	3,158,885	6,865,666
Central Vermont.....	July	872,000	81,000	1,017,000	185,306	128,585	15,835	387,760	748,166
.....	7 mos.	5,205,000	596,000	5,960,000	1,039,673	1,039,673	107,427	2,476,952	4,055,595
Chesapeake & Ohio.....	July	29,957,470	810,332	30,767,802	3,667,861	4,580,953	480,973	18,346,000	70,4
.....	7 mos.	159,897,883	4,224,397	170,521,608	24,460,256	33,143,087	3,476,473	56,423,222	124,608,222
Chicago & Eastern Illinois.....	July	1,932,439	277,544	2,425,594	319,489	361,728	94,872	1,830,298	925,773
.....	7 mos.	12,794,229	1,566,496	15,942,167	2,034,689	2,385,792	663,245	6,475,239	12,429,896
Chicago & Illinois Midland.....	July	730,211	2,025	732,236	88,397	118,400	22,450	213,668	477,292
.....	7 mos.	4,429,692	9,267	4,438,959	582,181	838,506	169,659	1,406,100	3,251,648
Chicago & North Western.....	July	12,465,114	2,180,395	14,645,509	2,700,384	2,840,043	342,898	7,039,278	13,613,878
.....	7 mos.	77,561,786	11,583,452	99,513,067	16,730,932	19,815,437	2,166,123	46,633,619	90,376,568
Chicago, Burlington & Quincy.....	July	15,725,187	1,861,415	19,254,613	3,582,501	3,005,951	401,520	6,458,574	14,247,832
.....	7 mos.	100,898,292	9,572,673	121,867,948	18,937,696	20,111,257	2,902,568	44,532,610	91,254,731
Chicago Great Western.....	July	1,782,857	8,317	1,995,296	371,903	266,956	89,469	635,429	1,230,826
.....	7 mos.	16,422,166	98,815	17,481,492	3,661,284	2,867,554	670,264	5,652,597	12,539,890
Chicago, Indianapolis & Louisville.....	July	9,665,405	70,527	9,735,932	306,446	306,446	73,084	539,470	1,230,580
.....	7 mos.	541	552,656	10,841,527	1,979,908	1,613,548	524,054	3,761,858	8,487,220
Chicago, Milwaukee, St. Paul & Pacific.....	July	17,404,809	1,802,586	21,259,831	3,542,690	3,549,498	428,819	8,544,719	16,953,213
.....	7 mos.	109,910,748	9,509,649	132,046,564	19,414,107	25,850,675	2,963,337	58,952,937	113,299,029
Chicago, Rock Island & Pacific.....	July	8,658,838	1,007,662	10,382,265	1,752,944	1,676,854	409,478	3,981,118	8,202,497
.....	7 mos.	79,108,685	9,319,746	95,659,601	12,209,763	16,103,073	3,052,001	36,303,731	72,336,231
Chicago, St. Paul, Minn. & Omaha.....	July	2,427,046	206,360	2,832,434	441,543	356,412	55,372	1,334,555	2,300,636
.....	7 mos.	14,631,425	1,170,911	17,123,640	2,743,079	2,526,491	388,295	8,866,817	15,322,429
Clinchfield.....	July	1,516,708	1,284	1,528,852	210,486	291,202	31,119	336,335	897,652
.....	7 mos.	11,277,344	13,829	11,354,116	1,595,107	2,031,612	231,240	2,656,856	6,725,268

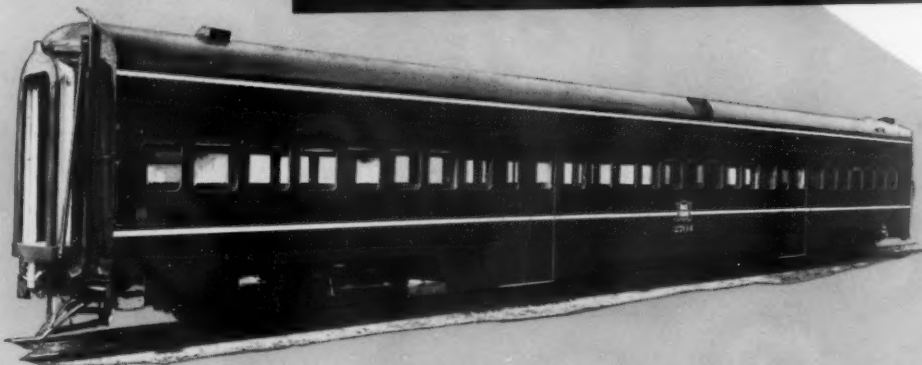
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DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1950

Name of road	Av. mileage operated during period	Operating revenues				Operating Expenses				Operating ratio	Net from operation	Railway tax accruals	Net railway operating income
		Freight	Passenger	Total	Maintenance of way and structures	Equipment	Traffic	Transportation	Total				
Colorado & Southern.....	740	1,009,381	93,642	1,103,023	212,618	149,501	24,709	422,367	860,708	72.2	239,315	182,778	196,600
Ft. Worth & Denver City.....	743	6,158,085	451,583	6,609,668	1,099,687	1,108,479	174,085	2,630,025	5,354,469	74.6	1,821,074	966,540	508,250
Colorado & Wyoming.....	967	1,463,996	174,037	1,638,033	222,310	1,772,257	609,490	6,090,920	1,205,755	68.0	234,318	1,187,840	1,211,366
Colorado & Wyoming.....	41	118,075	778,946	897,021	1,475,764	1,335,209	337,971	3,405,999	7,068,477	67.5	3,401,630	1,566,477	1,835,153
Columbus & Greenville.....	168	1,054,085	183	1,054,268	258,313	24,547	3,950	52,120	138,029	98.1	2,615	13,122	7,048
Delaware & Hudson.....	704	3,868,435	190,454	4,058,889	4,175,545	866,372	65,108	1,718,257	3,464,324	83.0	711,221	391,202	320,019
Delaware, Lackawanna & Western.....	966	3,118,763	907,575	4,026,338	3,921,444	6,611,003	503,096	12,064,348	24,134,139	81.8	5,424,350	2,926,430	1,993,074
Denver & Rio Grande Western.....	2,413	3,100,305	261,096	3,361,401	809,141	804,197	145,932	1,462,011	3,243,490	91.4	306,412	290,169	167,088
Detroit & Mackinac.....	232	1,859,765	1,516,996	3,376,761	4,402,801	6,551,789	1,014,585	11,914,133	25,552,722	81.1	5,970,125	3,102,431	3,153,169
Detroit & Toledo Shore Line.....	50	1,050,084	4,578	1,054,662	210,000	135,030	12,204	218,331	629,597	56.8	105,292	194,436	280,576
Detroit, Toledo & Ironton.....	464	1,335,166	570	1,335,736	1,069,184	1,671,975	23,400	399,533	820,163	58.7	577,451	376,480	112,246
Duluth, Missabe & Iron Range.....	563	6,326,852	3,651	6,330,503	6,162,278	513,744	9,188	1,592,969	2,807,738	57.5	4,374,010	1,781,953	2,089,944
Duluth, South Shore & Atlantic.....	539	17,810,364	11,910	17,822,274	3,787,212	3,750,415	54,896	6,267,118	14,334,193	68.5	4,566,657	2,097,841	2,447,844
Duluth, Winnipeg & Pacific.....	175	3,545,996	48,641	3,594,637	1,452,550	98,315	129,538	1,402,134	505,876	85.0	89,215	3,538,159	2,927,362
Elgin, Joliet & Eastern.....	238	2,858,674	680,475	3,539,149	1,922,062	1,896,774	305,477	3,697,065	68,000,032	75.7	21,871,333	1,460,368	1,358,019
Florida East Coast.....	571	1,096,984	358,346	1,455,330	408,282	412,896	58,824	649,102	1,670,947	105.2	82,087	146,730	297,849
Georgia Railroad.....	326	4,139,866	172,135	4,312,001	640,710	724,297	186,052	2,032,273	3,828,403	82.9	3,874,185	1,064,973	1,853,849
Georgia & Florida.....	408	1,585,369	18	1,585,387	59,790	31,593	15,408	103,074	221,677	81.4	713,117	235,894	687,097
Grand Trunk Western.....	971	4,319,000	230,000	4,549,000	753,034	718,029	66,578	1,981,760	3,678,567	76.3	1,145,433	1,615,501	675,556
Canadian Natl. Lines in New Eng.....	172	1,081,000	46,800	1,127,800	423,361	307,765	19,163	832,559	1,661,562	124.2	323,562	157,346	736,167
Great Northern.....	8,316	11,668,149	1,222,542	12,890,691	2,955,155	2,674,632	335,192	5,615,994	12,195,981	85.0	2,160,382	1,477,847	658,927
Green Bay & Western.....	224	2,074,998	425,299	2,500,297	1,020,612	1,183,265	222,362	1,978,415	4,667,334	72.4	1,785,546	718,970	807,730
Gulf, Mobile & Ohio.....	2,898	35,920,693	2,677,472	38,598,165	6,741,379	7,820,237	1,371,495	13,151,780	31,511,312	75.9	10,024,320	4,100,603	4,042,998
Illinois Central.....	6,543	17,778,642	1,806,073	19,584,715	3,595,501	3,316,551	428,567	7,635,147	13,432,827	73.3	3,750,250	3,353,664	2,680,359
Illinois Terminal.....	462	789,221	92,748	881,969	140,730	130,738	33,902	392,915	747,288	74.7	253,756	116,280	99,808
Kansas City Southern.....	891	2,773,155	110,072	2,883,227	293,652	396,624	92,902	926,091	1,809,244	57.8	1,419,413	702,555	587,950
Kansas, Oklahoma & Gulf.....	327	490,405	650	491,055	679,748	2,734,482	630,206	6,455,373	12,508,188	57.9	9,103,165	3,249,000	4,602,699
Lake Superior & Ishpeming.....	156	510,027	28	510,055	48,530	36,057	1,877	115,101	220,654	35.4	402,519	191,930	219,105
Lehigh & Hudson River.....	96	1,519,476	248	1,520,724	1,849,256	319,765	12,665	490,826	1,212,850	65.6	636,406	409,515	267,983
Lehigh & New England.....	191	1,645,200	.....	1,645,200	244,547	21,324	8,328	89,342	1,621,555	66.3	82,392	32,052	30,504
Lehigh Valley.....	1,251	5,214,421	339,783	5,554,204	772,827	952,400	132,245	2,360,623	4,453,275	76.9	1,338,053	440,182	741,850
Long Island.....	365	1,167,551	3,503,169	4,670,720	4,853,786	3,511,241	16,228	2,114,767	3,522,585	72.6	1,331,201	455,985	503,489
		7,550,467	19,232,143	26,782,610	3,979,950	5,097,778	122,190	14,464,474	24,437,497	87.1	3,198,667	3,198,667	-2,476,484

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"OUR ASSOCIATION OVER MANY YEARS HAS BEEN A PLEASURE FOR ME, — NOT ONLY BECAUSE OF THE FRIENDSHIP I HAVE ENJOYED WITH YOU, BUT ALSO BECAUSE OF THE CONFIDENCE I HAVE HAD IN YOUR COMPANY'S RELIABILITY.

I COULD ALWAYS DEPEND UPON YOUR REPRESENTATIONS AND KNOW THAT ANY WORK YOU UNDERTOOK WOULD BE WELL PERFORMED.

I HAVE NEVER HEARD OF A POOR JOB THAT YOU TURNED OUT OR ONE THAT WAS NOT HIGHLY SATISFACTORY.

SINCERELY YOURS."

Name will not be given upon request.

DIESEL LOCOMOTIVE SAND TOWERS: LOCOMOTIVE COALING, SANDING AND CINDER PLANTS: "BLACKHALL" CAR WASHERS: WILSON MOVABLE VAN WASHERS: "RED DEVIL" LOCOMOTIVE COALERS: COAL CAR SHAKERS

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1950

Name of road	Av. mileage operated during period	Operating Revenues				Operating Expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equip-ment	Traffic	Trans-portion	Total			Railway tax accruals	1949
Louisiana & Arkansas.....	756	1,600,300	63,200	1,731,608	11,374,616	182,860	40,536	505,292	983,626	56.8	4,436,486	291,262	243,708
Louisiana & Arkansas.....	756	10,447,449	443,326	11,374,616	11,374,616	182,860	40,536	505,292	983,626	56.8	4,436,486	291,262	243,708
Louisville & Nashville.....	4,779	13,439,013	1,204,767	15,494,762	2,132,661	1,237,126	270,482	6,027,140	12,054,182	77.9	4,436,486	1,831,969	1,831,969
Louisville & Nashville.....	4,779	95,431,747	6,819,251	106,899,222	15,635,751	22,387,351	2,121,099	43,406,050	87,463,981	79.5	20,983,981	13,066,981	11,916,981
Maine Central.....	981	1,347,820	192,340	1,540,160	380,398	226,430	134,485	4,972,401	10,822,295	78.8	2,911,124	1,451,987	1,451,987
Maine Central.....	981	11,947,820	965,932	13,733,419	2,668,716	2,578,562	134,485	4,972,401	10,822,295	78.8	2,911,124	1,451,987	1,451,987
Midland Valley.....	334	158,272	8	158,280	4,639	11,654	3,596	52,941	118,941	76.2	37,215	17,184	22,931
Midland Valley.....	334	1,119,831	29	1,140,594	292,381	114,992	26,694	385,707	862,408	75.6	278,186	126,440	151,746
Minneapolis & St. Louis.....	1,416	1,669,838	7,069	1,728,727	296,492	251,401	101,462	522,101	1,261,819	73.0	466,908	239,948	226,960
Minneapolis & St. Louis.....	1,416	10,169,349	46,697	10,528,052	1,871,571	1,740,706	758,983	3,477,757	8,517,849	81.0	2,004,203	1,029,459	810,003
Minneapolis, St. Paul & S. M. R. Co.....	3,224	3,210,253	168,524	3,578,962	679,771	501,566	68,546	1,312,514	2,681,193	74.9	897,769	249,921	640,464
Minneapolis, St. Paul & S. M. R. Co.....	3,224	17,145,623	573,460	18,747,842	4,413,999	3,620,289	464,284	8,313,161	17,579,855	93.7	1,176,987	1,454,877	483,563
Mississippi Central.....	148	195,749	.....	195,749	39,695	24,261	11,518	54,741	138,667	69.5	60,775	29,938	18,096
Mississippi Central.....	148	1,265,776	81	1,291,909	287,519	177,081	86,399	352,260	965,264	74.7	326,644	142,843	183,801
Missouri-Illinois.....	172	348,620	249	350,869	63,845	49,480	7,359	99,726	229,475	65.4	121,394	84,905	37,047
Missouri-Illinois.....	172	2,541,187	1,620	2,559,329	413,621	361,012	51,275	670,851	1,547,995	69.5	1,011,334	563,470	434,693
Missouri-Kansas-Texas Lines.....	3,243	5,777,072	368,164	6,623,568	929,618	903,042	218,230	2,291,548	4,608,316	69.6	2,015,252	888,335	832,449
Missouri-Kansas-Texas Lines.....	3,243	36,617,227	2,336,904	42,245,551	6,436,870	6,001,904	1,554,793	15,409,986	31,341,465	74.2	10,904,086	4,492,054	4,263,607
Missouri Pacific.....	6,966	16,236,977	1,068,263	18,899,560	2,773,269	2,940,731	420,416	6,445,071	13,139,477	69.5	5,760,083	2,270,928	2,992,096
Missouri Pacific.....	6,966	99,581,325	5,982,249	115,964,931	17,699,788	20,333,210	2,835,914	44,612,310	89,321,910	77.0	26,643,021	9,435,587	13,207,434
Gulf Coast Lines.....	1,711	2,236,971	592,361	3,228,700	4,516,696	3,753,581	521,200	1,113,915	2,640,666	72.2	7,821,727	2,130,884	5,690,843
Gulf Coast Lines.....	1,711	22,060,033	201,235	23,261,268	4,516,696	3,753,581	521,200	1,113,915	2,640,666	72.2	7,821,727	2,130,884	5,690,843
International-Great Northern.....	1,104	15,796,349	1,147,550	18,633,039	3,420,347	3,263,543	353,266	7,101,862	14,961,611	80.3	3,671,428	974,283	1,727,161
International-Great Northern.....	1,104	550,730	838	551,568	75,195	63,300	1,001	193,686	341,219	61.4	214,347	93,979	73,338
Montgomery.....	170	3,145,091	3,821	3,175,664	470,657	411,309	6,803	2,235,899	2,166,178	68.2	1,009,486	273,335	95,607
Montgomery.....	170	1,691,443	.....	1,691,443	57,632	59,285	887	61,832	187,869	110.9	18,426	24,079	18,781
Montour.....	51	1,385,646	.....	1,385,646	194,263	434,612	6,009	467,166	1,177,380	84.5	215,443	262,473	383,076
Montour.....	51	2,445,671	147,014	2,806,819	407,931	384,381	92,574	992,600	1,977,330	70.4	829,489	502,041	355,116
Nashville, Chatt. & St. Louis.....	1,049	16,633,544	969,589	19,420,749	3,306,158	2,702,378	715,028	7,198,637	14,663,867	75.5	4,756,882	2,404,280	2,242,708
Nashville, Chatt. & St. Louis.....	1,049	43,416,626	10,860,501	60,798,786	6,632,700	11,555,314	1,002,398	27,052,599	49,091,949	80.7	11,706,837	4,470,377	5,888,492
New York Central.....	10,733	294,753,356	64,813,805	400,769,246	46,138,662	88,101,772	6,940,422	185,668,644	346,712,265	86.5	54,056,981	30,580,497	11,975,303
New York Central.....	10,733	3,601,762	95,014	3,810,183	379,970	866,372	65,201	1,239,470	2,799,087	71.9	1,071,096	744,280	772,617
Pittsburgh & Lake Erie.....	221	21,684,044	513,585	23,030,507	2,409,796	5,916,663	475,031	8,250,535	18,317,029	79.5	4,713,478	3,824,259	4,630,843
Pittsburgh & Lake Erie.....	221	9,981,099	158,113	10,489,693	1,326,786	1,599,707	275,500	3,799,500	7,393,672	70.5	3,096,021	1,394,936	1,506,379
New York, Chicago & St. Louis.....	2,192	77,088,437	986,719	80,389,177	9,989,438	12,535,200	1,996,262	26,938,698	54,125,510	67.5	26,159,667	10,938,254	13,357,448
New York, Chicago & St. Louis.....	2,192	7,045,051	4,346,684	12,340,162	1,795,447	1,805,388	189,084	5,116,261	9,530,217	77.2	2,818,945	1,219,000	744,730
New York, New Haven & Hartford.....	1,795	49,427,406	26,008,685	83,130,325	11,654,660	12,627,025	1,398,307	35,085,117	65,346,863	78.6	17,783,462	6,467,000	5,619,580
New York, New Haven & Hartford.....	1,795	1,214,740	.....	1,214,740	40,224	18,741	.....	43,233	106,826	6.4	681,661	60,006	51,761
New York Connecting.....	21	1,841,811	.....	1,841,811	48,234	13,741	.....	43,233	106,826	6.4	681,661	60,006	51,761
New York, Ontario & Western.....	544	3,648,649	63,652	3,932,627	701,072	608,499	173,653	1,955,285	3,640,056	92.6	292,571	267,263	476,357
New York, Ontario & Western.....	544	350,373	36,682	400,274	51,953	50,141	6,376	177,715	315,165	78.7	85,109	35,988	6,423
New York, Susquehanna & Western.....	120	2,513,355	272,775	2,871,234	322,559	356,844	44,393	1,221,433	2,141,373	74.6	729,861	221,033	260,189
New York, Susquehanna & Western.....	120	11,571,210	451,806	12,468,799	1,990,418	2,841,577	244,759	3,913,436	9,515,848	76.3	2,952,951	2,462,598	1,660,830
Norfolk & Western.....	2,129	83,256,810	2,461,210	89,051,635	13,925,780	19,185,852	1,780,714	28,036,099	66,483,348	74.7	22,568,287	15,262,094	13,717,398
Norfolk & Western.....	2,129	83,256,810	2,461,210	89,051,635	13,925,780	19,185,852	1,780,714	28,036,099	66,483,348	74.7	22,568,287	15,262,094	13,717,398
Norfolk Southern.....	673	655,574	.....	655,574	674,375	82,138	43,300	236,286	551,212	81.7	123,163	60,691	42,167
Norfolk Southern.....	673	4,942,265	1,392	5,064,536	1,055,996	680,156	299,285	1,680,203	4,125,281	81.5	939,255	416,582	331,585
Norfolk Southern.....	673	12,722,358	610,500	14,313,469	2,279,679	2,398,482	248,011	4,881,203	10,406,839	72.7	3,906,630	1,347,556	3,010,441
Norfolk Southern.....	6,903	69,582,898	3,282,611	78,782,702	14,574,717	17,606,077	1,785,263	32,010,718	70,035,718	88.9	8,746,984	8,212,256	3,747,418
Norfolk Southern.....	6,903	941,070	28,668	973,228	168,400	86,202	4,173	378,260	649,429	66.7	323,799	135,198	118,720
Northwestern Pacific.....	331	5,519,802	5,439	5,525,241	1,234,074	595,380	31,387	2,494,936	4,453,118	78.0	1,256,318	514,986	297,330
Northwestern Pacific.....	331	78,735	.....	78,735	23,453	4,141	1,359	25,379	54,814	68.2	25,526	9,939	5,756
Oklahoma City-Ada-Atoka.....	132	550,307	.....	550,307	158,988	27,995	9,948	153,032	377,747	67.8	179,361	66,131	26,425
Oklahoma City-Ada-Atoka.....	132	550,307	.....	550,307	158,988	27,995	9,948	153,032	377,747	67.8	179,361	66,131	26,425
Pennsylvania.....	10,118	59,997,698	12,235,627	78,767,843	10,447,547	18,656,563	1,148,147	31,697,108	64,898,067	82.4	13,869,776	6,853,746	5,309,936
Pennsylvania.....	10,118	366,845,563	79,741,437	446,586,999	61,333,051	113,630,873	7,233,434	214,539,454	416,979,454	85.1	72,550,303	36,168,503	26,224,031
Pennsylvania Reading Seaboard Lines.....	386	3,474,464	1,406,522	4,880,986	1,209,335	1,201,202	75,293	3,822,837	6,599,457	134.7	1,701,659	611,161	3,159,660
Pennsylvania Reading Seaboard Lines.....	386	3,474,464	1,406,522	4,880,986	1,209,335	1,201,202	75,293	3,822,837	6,599,457	134.7	1,701,659	611,161	3,159,660

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1950

Name of road	Av. mileage operated during period	Operating Revenues					Operating Expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Way and structures	Equip-	Traffic	Trans- portation	Total				Railway tax accruals	1950
Pittsburg & Shawmut.....	July 97	228,596	.....	228,596	43,892	59,967	2,711	59,967	173,305	75.6	55,957	23,282	22,610	11,074
Pittsburg & West Virginia.....	7 mos. 97	1,424,752	.....	1,424,752	280,506	251,005	20,293	280,506	970,350	68.4	451,063	133,350	284,372	224,843
Pittsburg & West Virginia.....	July 132	648,898	.....	648,898	161,203	136,307	38,980	171,336	541,746	80.9	127,637	63,310	92,075	91,986
Reading.....	7 mos. 132	4,504,267	.....	4,504,267	934,235	288,482	1,181,746	288,482	3,567,647	76.9	1,073,208	520,989	770,217	820,283
Reading.....	July 1,317	8,265,348	.....	8,265,348	1,815,468	1,509,803	2,918,107	1,509,803	7,353,757	79.0	1,650,344	959,179	981,289	519,550
Reading.....	7 mos. 1,317	56,938,681	.....	56,938,681	9,048,636	13,217,413	19,510	25,760,309	50,978,865	79.8	12,865,571	6,028,313	6,776,837	5,527,843
Richmond, Fredericksburg & Potomac.....	July 118	1,140,824	.....	1,140,824	269,318	272,290	17,146	589,076	1,242,121	67.2	607,277	326,027	249,887	104,713
Rutland.....	7 mos. 118	8,476,430	.....	8,476,430	1,933,800	1,659,925	128,835	4,485,114	9,031,330	66.5	4,555,199	2,032,593	1,853,724	562,014
Rutland.....	July 407	380,362	.....	380,362	57,443	74,365	12,844	248,480	409,553	84.6	74,418	27,799	30,624	56,030
Sacramento Northern.....	7 mos. 407	2,488,742	.....	2,488,742	188,063	3,121,107	97,813	1,719,926	2,985,815	95.7	135,292	196,430	208,141	429,151
Sacramento Northern.....	July 271	273,873	.....	273,873	666	479,692	173,030	101,071	1,773,030	62.2	2,425,401	36,051	48,025	22,325
Sacramento Northern.....	7 mos. 271	1,300,229	.....	1,300,229	1,134,248	344,871	15,448	493,864	1,020,555	76.5	313,693	118,251	83,985	329,259
St. Louis-San Francisco.....	July 4,635	8,105,732	.....	8,105,732	1,484,752	1,460,161	225,414	3,370,726	6,947,701	75.4	2,269,696	1,389,016	998,897	522,199
St. Louis, San Francisco & Texas.....	7 mos. 4,637	54,019,613	.....	54,019,613	10,131,283	10,599,636	1,610,817	23,258,006	48,386,495	79.0	12,895,832	6,853,120	6,297,301	4,187,605
St. Louis, San Francisco & Texas.....	July 159	340,892	.....	340,892	42,288	40,303	14,847	146,317	253,828	69.4	111,964	32,635	32,233	68,453
St. Louis, San Francisco & Texas.....	7 mos. 159	2,106,974	.....	2,106,974	343,925	237,526	106,288	956,029	1,713,632	74.5	586,572	113,992	106,334	191,072
St. Louis, San Francisco & Texas.....	July 1,569	3,138,135	.....	3,138,135	531,612	596,974	136,464	1,553,646	2,980,524	55.1	2,425,401	1,145,636	1,045,194	413,793
St. Louis, San Francisco & Texas.....	7 mos. 1,569	32,118,309	.....	32,118,309	4,941,491	4,075,322	978,340	10,399,472	21,584,229	64.0	12,147,990	4,913,329	5,725,772	4,860,086
Seaboard Air Line.....	July 4,146	7,709,935	.....	7,709,935	1,386,311	1,271,040	307,795	3,375,955	7,985,871	77.3	2,135,354	1,191,156	964,843	615,791
Seaboard Air Line.....	July 4,146	63,103,931	.....	63,103,931	12,148,995	13,111,731	2,217,732	27,298,532	58,240,511	75.8	18,820,373	8,298,207	8,716,527	6,310,215
Southern.....	7 mos. 4,146	15,290,234	.....	15,290,234	2,530,765	2,521,092	367,008	6,591,790	13,768,911	75.9	4,376,129	2,213,449	2,085,360	1,020,984
Southern.....	July 6,347	108,558,854	.....	108,558,854	17,520,004	23,449,043	2,475,962	45,931,043	94,794,598	75.0	31,617,722	14,826,244	14,830,440	10,780,108
Alabama Great Southern.....	7 mos. 316	1,221,819	.....	1,221,819	215,019	311,453	28,199	405,100	1,100,972	73.9	389,777	226,544	197,928	75,967
Alabama Great Southern.....	July 316	8,132,195	.....	8,132,195	1,395,761	1,968,863	194,964	3,305,295	7,253,294	76.7	2,200,102	1,352,712	983,835	852,228
Cinn., New Orleans & Texas Pacific.....	July 337	2,086,000	.....	2,086,000	666,278	62,046	907,282	907,282	2,150,439	64.3	1,192,729	608,895	702,636	437,282
Georgia Southern & Florida.....	7 mos. 337	20,075,563	.....	20,075,563	3,443,164	410,511	62,046	6,588,702	14,479,556	64.7	7,891,728	3,791,728	4,145,901	3,914,412
Georgia Southern & Florida.....	July 397	497,423	.....	497,423	66,495	594,360	7,325	206,949	438,916	73.9	155,390	22,153	13,796	5,982
New Orleans & Northeastern.....	7 mos. 397	3,449,468	.....	3,449,468	530,767	432,527	48,448	1,389,503	2,860,544	65.7	1,491,893	330,276	326,787	276,665
New Orleans & Northeastern.....	July 204	954,841	.....	954,841	62,173	1,065,022	15,794	253,931	536,534	50.4	528,488	240,779	236,078	79,074
New Orleans & Northeastern.....	7 mos. 204	5,724,783	.....	5,724,783	990,449	667,362	113,691	1,535,068	3,574,973	55.8	2,832,476	1,295,439	1,229,476	935,688
Southern Pacific.....	July 8,144	35,776,244	.....	35,776,244	4,384,600	8,012,717	708,242	15,837,182	30,820,588	73.8	10,917,295	5,367,200	3,415,497	1,940,138
Texas & New Orleans.....	7 mos. 8,143	214,010,110	.....	214,010,110	20,767,621	50,702,846	4,876,923	95,006,683	192,381,105	76.9	57,669,158	28,331,982	18,717,999	12,251,000
Texas & New Orleans.....	July 4,316	9,180,152	.....	9,180,152	1,713,164	1,490,934	222,838	3,868,096	7,781,514	73.7	2,782,894	1,105,053	991,023	974,490
Spokane International.....	7 mos. 152	59,721,896	.....	59,721,896	68,333,622	11,338,409	1,493,638	25,468,059	51,727,477	75.7	16,605,145	6,834,958	5,791,811	6,108,893
Spokane International.....	July 152	200,661	.....	200,661	1,638	17,638	4,733	55,749	127,733	59.5	86,991	29,112	38,475	6,044
Spokane International.....	7 mos. 152	1,119,119	.....	1,119,119	286,878	127,212	29,721	362,799	870,109	61.0	489,037	151,030	131,173	21,794
Spokane, Portland & Seattle.....	July 944	1,763,033	.....	1,763,033	367,551	398,991	80,876	608,314	1,450,995	73.5	527,488	162,457	315,672	248,323
Tennessee Central.....	7 mos. 944	12,758,691	.....	12,758,691	2,990,718	1,838,127	141,111	4,732,309	10,270,762	73.1	3,772,218	1,182,299	2,065,927	1,254,732
Texas & Northern.....	7 mos. 286	3,433,131	.....	3,433,131	491,234	385,781	69,706	896,888	1,965,522	79.0	623,182	169,626	235,545	126,381
Texas & Northern.....	July 8	118,440	.....	118,440	3,539	5,968	1,067	20,884	34,740	26.8	94,957	36,791	42,746	5,613
Texas & Northern.....	7 mos. 8	582,411	.....	582,411	121,375	32,941	4,947	116,790	204,247	31.1	452,175	153,206	219,011	167,703
Texas & Pacific.....	July 1,846	5,181,130	.....	5,181,130	738,066	931,734	152,249	2,060,052	4,186,797	69.0	1,879,800	733,988	786,123	575,801
Texas Mexican.....	7 mos. 1,846	32,389,089	.....	32,389,089	6,006,899	6,006,899	1,087,083	13,346,416	27,926,770	73.8	9,932,386	3,242,932	4,480,814	3,906,221
Toledo, Peoria & Western.....	7 mos. 162	27,390,4	.....	27,390,4	3,005,559	41,922	7,116	70,254	157,823	52.5	142,736	60,159	55,527	59,137
Toledo, Peoria & Western.....	July 162	1,765,634	.....	1,765,634	152,879	383,806	44,105	391,878	1,083,367	55.1	884,558	356,286	367,279	293,453
Union Pacific.....	7 mos. 239	419,168	.....	419,168	16,888	59,952	33,584	100,850	233,562	54.6	194,132	79,792	74,660	43,686
Union Pacific.....	July 239	2,921,782	.....	2,921,782	465,686	223,287	62,237	699,474	1,802,020	60.7	1,165,966	432,368	478,917	368,096
Utah.....	7 mos. 9,719	34,635,009	.....	34,635,009	6,165,981	6,513,609	783,889	13,906,811	29,430,514	71.4	11,787,151	6,094,786	3,755,089	998,201
Utah.....	July 9,719	196,857,867	.....	196,857,867	35,073,960	35,073,960	5,668,256	82,595,393	179,064,113	76.7	54,304,433	31,054,433	14,194,427	485,614
Virginian.....	7 mos. 110	100,115	.....	100,115	20,795	47,841	679	43,152	119,306	119.1	19,140	11,827	11,827	70,771
Virginian.....	July 110	694,906	.....	694,906	131,985	335,936	4,846	326,943	851,780	122.0	153,647	82,048	165,380	200,439
Virginian.....	7 mos. 643	2,241,792	.....	2,241,792	337,787	531,808	36,217	1,558,824	4,066,587	67.9	738,468	491,000	543,217	406,641
Virginian.....	7 mos. 643	16,800,792	.....	16,800,792	3,787,970	3,787,970	258,975	4,066,587	11,016,009	61.2	6,151,387	3,294,100	4,347,320	4,406,118
Wabash.....	7 mos. 2,393	7,754,876	.....	7,754,876	1,067,539	1,067,539	271,973	3,478,761	6,416,053	73.1	2,361,578	1,051,737	860,743	733,870
Wabash.....	July 2,393	51,278,927	.....	51,278,927	7,797,529	7,797,529	1,717,987	24,093,743	49,432,699	75.8	13,938,121	5,678,121	5,150,534	3,356,844
Ann Arbor.....	7 mos. 294	707,751	.....	707,751	83,817	21,799	24,799	349,356	570,454	68.1	364,343	108,276	127,013	126,632
Western Maryland.....	7 mos. 837	5,200,555	.....	5,200,555	685,798	685,798	161,748	3,346,087	3,897,886	73.6	1,432,095	450,023	768,888	245,269
Western Maryland.....	July 837	3,128,913	.....	3,128,913	470,926	723,175	73,431	2,001,136	2,414,420	73.6	865,434	538,000	538,000	267,333
Western Maryland.....	7 mos. 837	21,138,606	.....	21,138,606	4,553,724	4,553,724	507,503	6,887,852	15,831,144	71.7	6,248,589	3,292,000	4,224,807	4,344,838
Western Pacific.....	7 mos. 1,195	2,753,261	.....	2,753,261	445,400	493,106	132,843	1,044,061	2,281,320	74.3	789,591	211,120	597,128	619,452
Wisconsin Central.....	7 mos. 1,051	2,426,526	.....	2,426,526	348,532	332,352	55,478	935,990	1,756,517	66.5	6,026,735	2,464,175	3,240,399	2,189,467
Wisconsin Central.....	July 1,051	14,726,526	14,726,526	2,373,566	2,391,470	412,188	6,269,370	12,050,213	76.0	3,797,959	1,134,901	1,634,820	1,271,914



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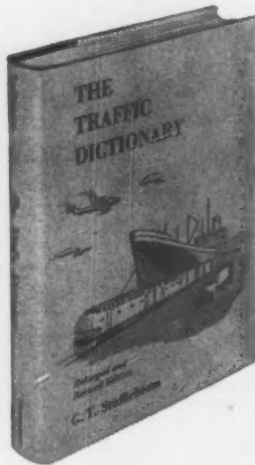
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